

Long-COVID Update



September 2025

Welcome to the latest edition of the Long-Covid Update. The aim of this publication is to bring together a range of recently published research and guidance that will help you make evidence-based decisions.

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Please contact Holly if you would like more information, or further evidence searches: holly.cook3@nhs.net.

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1. A multidisciplinary review of long COVID to address the challenges in diagnosis and updated management guidelines

Item Type: Journal Article

Authors: Abbas, Abbas Hamza;Haji, Maryam Razzaq;Shimal, Aya Ahmed;Kurmasha, Yousif Hameed;Al-Janabi, Ali;Azeez, Zainab Tawfeeq;Al-Ali, Amenah;Al-Najati, Hussein;Al-Waeli, Abdulrahman;Abdulhadi, Noor Alhussein S. Abdulhadi;Al-Tuaama, Abdullah;Al-Ashtary, Mustafa and Hussin, Ominat Amir

Publication Date: 2025

Journal: Annals of Medicine and Surgery (2012) 87(4), pp. 2105–2117

Abstract: Long COVID has emerged as a significant challenge since the COVID-19 pandemic, which was declared as an outbreak in March 2020, marked by diverse symptoms and prolonged duration of disease. Defined by the WHO as symptoms persisting or emerging for at least two months post-SARS-CoV-2 infection without an alternative cause, its prevalence varies globally, with estimates of 10-20% in Europe, 7.3% in the USA, and 3.0% in the UK. The condition's etiology remains unclear, involving factors, such as renin-angiotensin system overactivation, persistent viral reservoirs, immune dysregulation, and autoantibodies. Reactivated viruses, like EBV and HSV-6, alongside epigenetic alterations, exacerbate mitochondrial dysfunction and energy imbalance. Emerging evidence links SARS-CoV-2 to chromatin and gut microbiome changes, further influencing long-term health impacts. Diagnosis of long COVID requires detailed systemic evaluation through medical history and physical examination. Management is highly individualized, focusing mainly on the patient's symptoms and affected systems. A multidisciplinary approach is essential, integrating diverse perspectives to address systemic manifestations, underlying mechanisms, and therapeutic strategies. Enhanced understanding of long COVID's pathophysiology and clinical features is critical to improving patient outcomes and quality of life. With a growing number of cases expected globally, advancing research and disseminating knowledge on long COVID remain vital for developing effective diagnostic and management frameworks, ultimately supporting better care for affected individuals. (Copyright © 2025 The Author(s). Published by Wolters Kluwer Health, Inc.)

Access or request full text: <https://libkey.io/10.1097/MS9.000000000003066>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40212158&profd=e_host

2. Long COVID Optimal Health Programme to Enhance Mental and Physical Health: A Feasibility Randomised Controlled Trial

Item Type: Journal Article

Authors: Al-Jabr, Hiyam;Castle, David J.;Thompson, David R.;Windle, Karen;Belcher, John;Valenzuela, Mónica M. De Icaza;Helliwell, Toby and Ski, Chantal F.

Publication Date: 2025

Journal: Health Expectations: An International Journal of Public Participation in Health Care and Health Policy 28(4), pp. 1–10

Access or request full text: <https://libkey.io/10.1111/hex.70399>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=EPTOC187616964&provid=ehost>

3. The impact of long COVID on UK healthcare workers and their workplace: a qualitative study of healthcare workers with long COVID, their families, colleagues and managers

Item Type: Journal Article

Authors: Al-Oraibi, A.;Tarrant, C.;Woolf, K.;Nellums, L. B. and Pareek, M.

Publication Date: 2025

Journal: BMC Health Services Research 25(1), pp. 519

Abstract: This study received appropriate ethical approval from the London - Brighton and Sussex Research Ethics Committee (REC), and Health Research Authority REC (Ref No 20/ HRA/4718). All participants provided informed consent prior to their participation, and their confidentiality and anonymity were maintained throughout the study. Participants were informed of their right to withdraw at any time without consequence. Consent for publication: Not applicable. This study does not contain any identifying images or personal/clinical details of participants. Informed consent for use of anonymised quotes in publications was obtained from all participants as part of the ethical procedures. Competing interests: The authors declare no competing interests.; Background: Healthcare workers (HCWs) have been particularly impacted by long COVID, with negative effects on their work patterns and wellbeing. The aim of this study was to explore the intersection between work and long COVID for HCWs, to understand the impact of long COVID on their professional identity, their orientation to work, their wellbeing as professionals, and support needs and strategies for them as well as their managers to continue to work.; Methods: This qualitative study was conducted through semi-structured online interviews with three groups: HCWs with long COVID, their support network members, and healthcare managers between March 2023 and May 2024. To maintain confidentiality and address concerns about workplace stigma, healthcare managers were not matched with specific HCWs. Participants were recruited through purposive and snowball sampling, until data saturation was reached, defined as the point at which no new insights or themes were identified. Data were analysed using reflexive thematic analysis.; Results: A total of 42 participants were interviewed from three groups, comprising 24 HCWs, five support network members, and 13 healthcare managers. Four key themes were identified describing experiences of long COVID for HCWs: (1) Living and coping with long COVID as a HCW, (2) Workplace impact and adjustments, (3) The uncertain nature of long COVID and challenges of the definition, and (4) Feelings of guilt, stigma and blame.; Conclusion: In conclusion, long COVID has created significant challenges not only for HCWs but also for their managers, who struggled with staffing shortages and lack of clear guidance, and

support network members who experienced emotional strain while providing care. The combination of these challenges threatens NHS workforce stability and service delivery. Developing and embedding flexible, standardised workplace interventions-such as phased return-to-work policies and tailored occupational health support-could mitigate these impacts and inform scalable solutions across diverse healthcare systems. Enhanced training for healthcare managers and further research into culturally diverse coping mechanisms could improve support for affected HCWs, reduce stigma, and contribute to a more stable and resilient healthcare workforce. While based in the UK, these findings offer important insights for health systems globally that are grappling with the long-term workforce implications of long COVID. (© 2025. Crown.)

Access or request full text: <https://libkey.io/10.1186/s12913-025-12677-x>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40205414&prolid=ehost>

4. Prevalence of and factors associated with long COVID among diverse healthcare workers in the UK: a cross-sectional analysis of a nationwide study (UK-REACH)

Item Type: Journal Article

Authors: Al-Oraibi, Amani;Martin, Christopher A.;Woolf, Katherine;Bryant, Luke;Nellums, Laura B.;Tarrant, Carolyn;Khunti, Kamlesh and Pareek, Manish

Publication Date: 2025

Journal: BMJ Open 15(1), pp. e086578

Abstract: Objectives: To assess the prevalence of UK healthcare workers (HCWs) who reported symptoms of COVID-19 lasting for longer than 5 weeks and examine associated factors with experiencing long COVID in an ethnically diverse cohort.; **Design:** A cross-sectional study using data from the UK Research study into Ethnicity And COVID-19 Outcomes in HCWs cohort study.; **Setting:** Data were collected electronically between December 2020 and March 2021.; **Participants:** Individuals aged 16 years or older, residing in the UK, and working as HCWs or ancillary workers in a healthcare setting and/or registered with one of the seven major UK healthcare professional regulators.; **Primary and Secondary Outcome Measures:** The main outcome was long COVID (symptoms>5 weeks). The primary exposure of interest was self-reported ethnicity. We employed univariable and multivariable logistic regression to identify associations. We adjusted for demographic information, health status and existing long-term conditions in our multivariate analysis.; **Results:** In our analysis of 11 513 HCWs, we found that 2331 (20.25%) reported COVID-19, of whom 525 (22.52%) experienced long COVID. There were no significant differences in risk of long COVID by ethnic group. In terms of other demographic characteristics, the majority of those experiencing long COVID were female (80.0%) and were slightly older than those who did not experience long COVID (median age 46 (IQR 36-54)). In multivariable analyses of those who reported having had COVID-19, HCWs in nursing/midwifery roles (adjusted OR (aOR) 1.76, 95% CI 1.26 to 2.46; p=0.001) and allied health professions (aOR 1.42, 95% CI 1.05 to 1.93; p=0.023) had higher odds of experiencing long COVID compared with those in medical roles. Other factors significantly associated with long COVID included self-reported psychological conditions (eg, depression and anxiety) and

respiratory conditions (eg, asthma).; **Conclusions:** In this large ethnically diverse cohort study, more than one in five UK HCWs reported experiencing long COVID after acute COVID-19 during the first year of the pandemic. We found that specific demographic (older age and female gender) and occupational factors (nursing/midwifery and allied health professions) were associated with higher odds of long COVID. Notably, there were no significant differences in the risk of long COVID by ethnic group. Further research and collaborative efforts are urgently needed to address these factors effectively, develop targeted interventions and understand the temporal and longitudinal dynamics of the condition. (© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.)

Access or request full text: <https://libkey.io/10.1136/bmjopen-2024-086578>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39762108&profiid=ehost>

5. Cognitive Behavioral Therapy Approach May Improve Long COVID Symptoms, Boost Physical Function

Item Type: Journal Article

Authors: Anderer, S.

Publication Date: 2025

Journal: JAMA 333(7), pp. 559–560

Access or request full text: <https://libkey.io/10.1001/jama.2024.27437>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39820198&profiid=ehost>

6. Cognitive and mental health outcomes in long covid

Item Type: Journal Article

Authors: Aretouli, Eleni;Malik, Mansoor;Widmann, Catherine;Parker, Ann M.;Oh, Esther S. and Vannorsdall, Tracy D.

Publication Date: 2025

Journal: BMJ (Clinical Research Ed.) 390, pp. e081349

Abstract: Roughly one in five adults who meet criteria for long covid present with objective or subjective

cognitive dysfunction or elevated symptoms of depression or anxiety lasting ≥ 12 weeks from an acute covid illness. These neuropsychiatric sequelae have considerable functional consequences at the level of the individual, society, and the broader economy. Neuropsychiatric long covid symptoms are thought to be causally diverse, and a range of risk factors as well as biological, psychological, and environmental mechanisms have been hypothesized to contribute to symptom development and persistence. When present, objective cognitive deficits tend to be modest for most individuals, with some evidence suggesting increased risk of dysfunction and decline specifically for older adults with a history of severe acute illness. Longitudinal data suggest a delayed emergence of psychiatric symptoms may occur in the weeks and months after an acute covid illness. Emerging research points to the early recovery period as a potential window of opportunity for intervention to alter patient trajectories, though evidence based treatment remains lacking. (Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to <http://group.bmj.com/group/rights-licensing/permissions.>)

Access or request full text: <https://libkey.io/10.1136/bmj-2024-081349>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40670058&prolid=e>
[host](#)

7. How long is Long-COVID? Symptomatic improvement between 12 and 18 months in a prospective cohort study

Item Type: Journal Article

Authors: Barker-Davies, Robert; O'Sullivan, O.; Holdsworth, D. A.; Ladlow, P.; Houston, A.; Chamley, R.; Greenhalgh, A.; Nicol, E. D. and Bennett, A. N.

Publication Date: 2025

Journal: BMJ Military Health 171(2), pp. 126–133

Abstract: Introduction: COVID-19 infection can precede, in a proportion of patients, a prolonged syndrome including fatigue, exercise intolerance, mood and cognitive problems. This study aimed to describe the profile of fatigue-related, exercise-related, mood-related and cognitive-related outcomes in a COVID-19-exposed group compared with controls.; **Methods:** 113 serving UK Armed Forces participants were followed up at 5, 12 (n=88) and 18 months (n=70) following COVID-19. At 18 months, 56 were in the COVID-19-exposed group with 14 matched controls. Exposed participants included hospitalised (n=25) and community (n=31) managed participants. 43 described at least one of the six most frequent symptoms at 5 months: fatigue, shortness of breath, chest pain, joint pain, exercise intolerance and anosmia. Participants completed a symptom checklist, patient-reported outcome measures (PROMs), the National Institute for Health cognitive battery and a 6-minute walk test (6MWT). PROMs included the Fatigue Assessment Scale (FAS), Generalised Anxiety Disorder-7 (GAD-7), Patient Health Questionnaire-9 (PHQ-9) and Patient Checklist-5 (PCL-5) for post-traumatic stress.; **Results:** At 5 and 12 months, exposed participants presented with higher PHQ-9, PCL-5 and FAS scores than controls (ES (effect size) ≥ 0.25 , $p \leq 0.04$). By 12 months, GAD-7 was not significantly different to controls (ES 0.15).; **Conclusions:** This prospective cohort-controlled study observed adverse outcomes in depression,

post-traumatic stress, fatigue and submaximal exercise performance up to 12 months but improved by 18-month follow-up, in participants exposed to COVID-19 compared with a matched control group. (© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.)

Access or request full text: <https://libkey.io/10.1136/military-2023-002500>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=37788921&profiid=ehost>

8. Prevalence of depression, anxiety, stress, and suicide tendency among individual with long-COVID and determinants: A systematic review and meta-analysis

Item Type: Journal Article

Authors: Bidhendi-Yarandi, R.;Biglarian, A.;Karlstad, J. L.;Moe, C. F.;Bakhshi, E.;Khodaei-Ardakani, M. R. and Behboudi-Gandevani, S.

Publication Date: 2025

Journal: PloS One 20(1), pp. e0312351

Abstract: Background: While mental health alterations during active COVID-19 infection have been documented, the prevalence of long-term mental health consequences remains unclear. This study aimed to determine the prevalence of mental health symptoms-depression, anxiety, stress, and suicidal tendencies-and to identify their trends and associated risk factors in individuals with long-COVID.; **Methods:** We conducted a systematic literature search of databases including PubMed, EMBASE, Scopus, CINAHL, Cochrane Library, Web of Science, and PsycINFO up to August 2024, targeting observational studies published in English. Study quality was assessed using structured standard tools. The primary outcome was the pooled prevalence of depression, anxiety, stress, and suicidal tendencies in individuals with long-COVID. Secondary outcomes included trends in these mental health problems over time and identification of associated determinants.; **Results:** A total of 94 eligible studies were included in the analysis. The pooled prevalence estimates, regardless of follow up times duration, were as follows: depression, 25% (95%CI:22-28%; PI:1-59%); anxiety (adjusted via trim and fill method), 23%(95%CI:21-25%;PI:2-35%); composite outcomes of depression and/or anxiety, 25% (95%CI:23-27%;PI:2-51%); stress, 26%(95%CI:13-39%;PI:1-69%); and suicidality, 19%(95%CI:15-22%;PI:13-25%). The results of meta-regression analyses revealed a statistically significant trend showing a gradual decrease in the prevalence of the composite outcome of anxiety and/or depression over time (RD = -0.004,P = 0.022). Meta-regression results indicated that being female and younger age were significantly associated with a higher prevalence of mental health symptoms. Study design and study setting did not contribute to heterogeneity.; **Conclusion:** One-fourth of individual with long-COVID experience mental health symptoms, including depression, anxiety, and stress, which remain prevalent even two years post-infection despite a slight decreasing trend. Factors such as female gender and younger age were linked to higher rates of anxiety and depression. These findings indicate the need for ongoing mental health screening and early interventions to mitigate long-term psychological distress in long-COVID patients. (Copyright: © 2025

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Access or request full text: <https://libkey.io/10.1371/journal.pone.0312351>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39874315&prolid=e>
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9. Mind the gap: examining policy and social media discourse on Long COVID in children and young people in the UK

Item Type: Journal Article

Authors: Chepo, M.;Martin, S.;Déom, N.;Khalid, A. F. and Vindrola-Padros, C.

Publication Date: 2025

Journal: BMC Public Health 25(1), pp. 1373

Abstract: Background: Long COVID in children and young people (CYP) has posed significant challenges for health systems worldwide. Despite its impact on well-being and development, policies addressing the needs of CYP remain underdeveloped. This study examines UK Long COVID policies using ethical frameworks, integrating policy and social media analyses to explore public and professional concerns.; **Methods:** A mixed-methods approach was applied. Policy documents were reviewed using Thompson et al.'s pandemic preparedness framework and Campbell and Carnevale's child-inclusive ethical model. Social media discourse (12,650 posts) was analysed using Brandwatch™ to identify key themes around CYP and Long COVID policies. Data was collected and triangulated through the LISTEN method, which integrates policy analysis with social media discourse to ensure a holistic understanding of systemic gaps and public perceptions.; **Results:** Analysis highlighted gaps in accountability, inclusiveness, and transparency in policy development. Social media data reflected significant public dissatisfaction, primarily critiquing government accountability (90% of posts) and delayed policy responsiveness (29% of posts). Key ethical challenges included limited CYP representation and unequal access to services.; **Conclusions:** Recommendations include improving transparency, incorporating CYP perspectives in policymaking, and ensuring equitable access to care. These findings provide a foundation for ethically sound and inclusive policies addressing Long COVID in CYP. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12889-025-22563-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40221694&prolid=e>
[host](#)

10. Effects of sleep quality on the risk of various long COVID symptoms among older adults following infection: an observational study

Item Type: Journal Article

Authors: Du, M.;Yang, P.;Li, M.;Yu, X.;Wang, S.;Li, T.;Huang, C.;Liu, M.;Song, C. and Liu, J.

Publication Date: 2025

Journal: BMC Geriatrics 25(1), pp. 20

Abstract: Background: The long-term sequelae of coronavirus disease 2019 (COVID-19) and its recovery have become significant public health concerns. Therefore, this study aimed to enhance the limited evidence regarding the relationship between sleep quality on long COVID among the older population aged 60 years or old.; **Methods:** Our study included 4,781 COVID-19 patients enrolled from April to May 2023, based on the Peking University Health Cohort. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) scale. Long COVID was evaluated by well-trained health professionals through patients' self-reported symptoms. Binary logistic regression models were employed to calculate odds ratios (OR) and 95% confidence intervals (95% CI).; **Results:** The prevalence of long COVID among older adults was 57.4% (2,743/4,781). Specifically, the prevalence of general symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, and neurological and psychiatric symptoms was 47.7% (2,282/4,781), 3.4% (163/4,781), 35.2% (1683/4,781), 8.7% (416/4,781) and 5.8% (279/4,781), respectively. For each one-point increase in PSQI scores, the risk of long COVID, general symptoms, cardiovascular symptoms, gastrointestinal symptoms, and neurological and psychiatric symptoms increased by 3% (95% CI: 1.01, 1.06), 3% (95% CI: 1.01, 1.06), 7% (95% CI: 1.01, 1.13), 11% (95% CI: 1.07, 1.15), and 20% (95% CI: 1.15, 1.25), respectively. In multivariate models, compared with good sleepers, COVID-19 patients with poor sleep quality exhibited an increased risk of general symptoms (aOR = 1.17; 95% CI: 1.03, 1.33), cardiovascular symptoms (aOR = 1.50; 95% CI: 1.06, 2.14), gastrointestinal symptoms (aOR = 2.03; 95% CI: 1.61, 2.54), and neurological and psychiatric symptoms (aOR = 2.57; 95% CI = 1.96, 3.37).; **Conclusions:** Our findings indicate that poor sleep quality is related to various manifestations of long COVID in older populations. A comprehensive assessment and multidisciplinary management of sleep health and long COVID may be essential to ensure healthy aging in the future. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12877-025-05675-5>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39789478&profiid=ehost>

11. Physical activity and sedentariness levels in patients with post-exertional malaise resulting from post-COVID-19 syndrome

Item Type: Journal Article

Authors: Elkebir, Kamel-Eddine;Gilbert, Jo-Anne;Kugathasan, Thiffya Arabi;Cazeneuve, Camille;Chouchou,

Florian and Mathieu, Marie-Eve

Publication Date: 2025

Journal: Work (Reading, Mass.) 81(4), pp. 3162–3169

Abstract: Background Post-exertional malaise (PEM) is a complex phenomenon characterized by extreme fatigue, reduced endurance, and muscular and joint pains. Physical activity (PA) has recognized health benefits, including reducing the risks of chronic diseases and mortality. During the pandemic, a general decline in PA was measured, but the profile of the various components of PA and sedentariness in patients with PEM resulting from post-COVID-19 syndrome (PCS-19) remains scarce. It is relevant to observe the impact of these discomforts on PQ after their occurrence. **Objective** This study examines the detailed PA and sedentary profile of individuals affected by PEM associated with PCS-19. **Methods** An online questionnaire disseminated via social media platform evaluated PA and sedentariness before and after COVID-19 diagnostic. **Results** Individuals with PEM (n = 154) became more sedentary and inactive post-COVID-19. Specifically, PA at work decreased in women and those whose last infection occurred over a year ago. Walk decreased for women but increased for men. Bike journeys generally decreased after COVID-19. The severity of PEM, the pace of recovery, and fear of malaise influenced PA changes. **Conclusions** The PCS-19 leads to increased sedentary behavior and a decline in PA, particularly at work, and is more pronounced among women and those more severely affected by PEM. These findings are critical for post-COVID PA resumption, including for workers who go back to work and who regain normal duties while being potentially deconditioned.

Access or request full text: <https://libkey.io/10.1177/10519815251329231>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40289602&profiid=e_host

12. An international comparison of longitudinal health data collected on long COVID in nine high income countries: a qualitative data analysis

Item Type: Journal Article

Authors: Exley, Josephine; Stubbs, Edmund; Wittenberg, Raphael and Mays, Nicholas

Publication Date: 2025

Journal: Health Research Policy and Systems 23(1), pp. 37

Abstract: Background: Long coronavirus disease (COVID) presents a significant health challenge. Long-term monitoring is critical to support understanding of the condition, service planning and evaluation. We sought to identify and examine longitudinal health data collected on long COVID to inform potential decisions in England regarding the rationale for data collection, the data collected, the sources from which data were collected and the methods used for collection.; **Methods:** We included datasets in high-income countries that experienced similar coronavirus disease 2019 (COVID-19) waves to England pre-vaccine rollout. Relevant datasets were

identified through literature searches, the authors' networks and participants' recommendations. We undertook semi-structured interviews with individuals involved in the development and running of the datasets. We held a focus group discussion with representatives of three long COVID patient organisations to capture the perspective of those with long COVID. Emergent findings were tested in a workshop with country interviewees.; **Results:** We analysed 17 datasets from nine countries (Belgium, Canada, Germany, Italy, the Netherlands, New Zealand, Sweden, Switzerland and the United Kingdom). Datasets sampled different populations, used different data collection tools and measured different outcomes, reflecting different priorities. Most data collection was research (rather than health care system)-funded and time-limited. For datasets linked to specialist services, there was uncertainty surrounding how long these would continue. Definitions of long COVID varied. Patient representatives' favoured self-identification, given challenges in accessing care and receiving a diagnosis; New Zealand's long COVID registry was the only example identified using this approach. Post-exertion malaise, identified by patients as a critical outcome, was absent from all datasets. The lack of patient-reported outcome measures (PROMs) was highlighted as a limitation of datasets reliant on routine health data, although some had developed mechanisms to extend data collection using patient surveys.; **Conclusions:** Addressing research questions related to the management of long COVID requires diverse data sources that capture different populations with long COVID over the long-term. No country examined has developed a comprehensive long-term data system for long COVID, and, in many settings, data collection is ending leaving a gap. There is no obvious model for England or other countries to follow, assuming there remains sufficient policy interest in establishing a long-term long COVID patient registry. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12961-025-01298-9>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40128775&prolid=e>
[host](#)

13. Estimating the risk of post-COVID condition in deprived communities, migrants and ethnic minorities in England: findings from Virus Watch-a prospective community cohort study

Item Type: Journal Article

Authors: Fong, Wing Lam Erica;Beale, Sarah;Nguyen, Vincent;Kovar, Jana;Yavlinsky, Alexei;Hayward, Andrew C.;Abubakar, Ibrahim;van Kuijk, Sander Mj and Aldridge, Robert

Publication Date: 2025

Journal: Journal of Epidemiology and Community Health

Abstract: Background: Deprived communities, migrants and ethnic minorities were disproportionately affected by COVID-19 and may, therefore, be at a higher risk of post-COVID condition (PCC). This analysis, using data from the Virus Watch study, investigates how deprivation, migration status and ethnic minority status influence PCC risk in both the full cohort (all regardless of infection status) and those with a confirmed COVID-19 infection.; **Methods:** A subset of participants from Virus Watch, a prospective community cohort study in England, were included. We used logistic regression to compare the predicted probability of developing PCC in both full and infected cohorts among different deprivation levels, migration and ethnic

minority status categories by sex-at-birth during pre-Omicron and Omicron periods, adjusting for sociodemographic covariates.; **Results:** During the pre-Omicron period, PCC probability increased with deprivation levels, especially in females (most deprived: 7.8%, 95% CI 4.6% to 11.0%; least deprived: 3.5%, 2.5%-4.5%). Migrant and ethnic minority males had a higher likelihood of PCC than their respective counterparts, particularly in the full cohort for migrants (6.3%, 1.8%-10.8%) and the previously infected cohort for ethnic minorities (38.8%, 21.2%-56.4%). However, these disparities were less pronounced in females. In the Omicron period, these differential probabilities were also less evident.; **Conclusion:** Our findings suggest that greater PCC probability among these populations is driven by increased infection risk and postinfection determinants. This underscores the need for policies and interventions to reduce infection risk and affordable and easily available healthcare services for those with PCC. (© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY. Published by BMJ Group.)

Access or request full text: <https://libkey.io/10.1136/jech-2024-223491>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40623808&provid=ehost>

14. Cost-effectiveness of the ReDIRECT/counterweight-plus weight management programme to alleviate symptoms of long COVID

Item Type: Journal Article

Authors: Fraser, H. L.; Haag, L.; Brosnahan, N.; McConnachie, A.; Richardson, J.; Haig, C. E.; Ibbotson, T.; Ormerod, J.; O'Donnell, C. A.; Lean, M. E. J.; Sattar, N.; Blane, D. N.; Combet, E. and McIntosh, E.

Publication Date: 2025

Journal: Nature Communications 16(1), pp. 5592

Abstract: Long-term effects of COVID-19 infection, termed Long COVID (LC), are associated with reduced quality of life. Symptoms associated with overweight/obesity overlap with and may aggravate those of LC. This paper reports the economic evaluation alongside the ReDIRECT Trial, which evaluated the impact of an evidence-based, remotely-delivered weight management programme on self-reported symptoms of LC in those living with overweight/obesity in the United Kingdom. Recruited participants (n = 234) were randomly allocated to the intervention group (weight management) or control group (usual care). Incremental costs and Quality-Adjusted Life Years (QALYs) were calculated using intervention cost, healthcare resource use and EQ-5D-5L data collected at baseline, three and 6 months. In this work, we show that the ReDIRECT intervention is likely cost-effective in improving LC symptoms from an NHS/PSS perspective, compared to usual care (Incremental Cost-Effectiveness Ratio of £14,754/QALY). Adopting a broader societal perspective, the intervention becomes potentially cost saving compared to usual care. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1038/s41467-025-59909-6>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40593486&provid=e>

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15. A Mixed-Methods Study Exploring the Feasibility of a Digital Combined Lifestyle Intervention for Patients With Post Covid-19 Condition

Item Type: Journal Article

Authors: Gach, D.;Born, C. D. C.;Schuurman, L. L. T.;van Osch, F. H. M.;van den Bergh, J. P.;SMPL, Gerards;Crutzen, R.;AMWJ, Schols and RJHCG, Beijers

Publication Date: 2025

Journal: Health Expectations : An International Journal of Public Participation in Health Care and Health Policy 28(3), pp. e70299

Abstract: Introduction: Low physical activity and poor dietary quality can negatively influence Covid-19 recovery and increase the risk and duration of post-Covid-19 condition (PCC). This proof-of-concept nested intervention study aimed to evaluate the feasibility of a digital personalised combined lifestyle intervention (CLI) in patients with PCC using a mixed-methods design, assessing compliance, experiences and perceived effectiveness.; **Methods:** A nested intervention study, incorporating motivational interviewing aiming to enhance physical activity and dietary quality, was conducted within a multicentre prospective cohort study including 95 post-Covid-19 patients (aged 40-60) between May 2021 and September 2022. Patients in the intervention and control groups were followed at $\pm 3-6$ and $\pm 12-15$ months post Covid-19. The intervention consisted of nine monthly individual counselling sessions (30 min), two interactive-group sessions (60 min), and three educative webinars (45 min). Additionally, a nutritional supplement (NS; Remune, Smartfish, Oslo, Norway) high in omega-3 fatty acids, vitamin D and protein was provided to facilitate recovery. After the intervention, a process evaluation was conducted, comprising an evaluation questionnaire and semi-structured in-depth interviews.; **Results:** The intervention-to-treat group consisted of 47 patients (age 54.7 ± 6.0 years; 40% males; BMI 30.6 ± 5.8 kg/m²) of whom 74% had ≥ 8 individual sessions via telephone (66%) or video call (34%). Over half of the group (55%) attended the educative webinars, while attendance was lower in the interactive-group sessions, with 32% attending one session and 15% two sessions. The process evaluation indicated that patients were satisfied with the digital coaching and the frequency, duration and content of the sessions. Half of the patients reported perceived improvements in physical activity levels and dietary quality throughout the intervention, with the majority also reporting sustainment of these lifestyle changes post-intervention.; **Conclusion:** A digital personalised CLI was well-received among patients with PCC regarding compliance, experiences and perceived effectiveness. These findings will guide the development and implementation of tailored interventions to enhance overall well-being among patients with PCC.; **Patient or Public Contribution:** Patients' experiences regarding the design and implementation of the study were retrieved. Although participants were not directly involved in the initial design of the study, their experiences were actively incorporated into the refinement and implementation of the study procedures, thereby ensuring meaningful patient involvement. (© 2025 The Author(s). Health Expectations published by John Wiley & Sons Ltd.)

Access or request full text: <https://libkey.io/10.1111/hex.70299>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40415473&prolid=e>
[host](https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40415473&prolid=e)

16. 2024 Update of the RECOVER-Adult Long COVID Research Index

Item Type: Journal Article

Authors: Geng, L. N.;Erlandson, K. M.;Hornig, M.;Letts, R.;Selvaggi, C.;Ashktorab, H.;Atieh, O.;Bartram, L.;Brim, H.;Brosnahan, S. B.;Brown, J.;Castro, M.;Charney, A.;Chen, P.;Deeks, S. G.;Erdmann, N.;Flaherman, V. J.;Ghamloush, M. A.;Goepfert, P.;Goldman, J. D., et al

Publication Date: 2025

Journal: JAMA 333(8), pp. 694–700

Abstract: Importance: Classification of persons with long COVID (LC) or post-COVID-19 condition must encompass the complexity and heterogeneity of the condition. Iterative refinement of the classification index for research is needed to incorporate newly available data as the field rapidly evolves.; **Objective:** To update the 2023 research index for adults with LC using additional participant data from the Researching COVID to Enhance Recovery (RECOVER-Adult) study and an expanded symptom list based on input from patient communities.; **Design, Setting, and Participants:** Prospective, observational cohort study including adults 18 years or older with or without known prior SARS-CoV-2 infection who were enrolled at 83 sites in the US and Puerto Rico. Included participants had at least 1 study visit taking place 4.5 months after first SARS-CoV-2 infection or later, and not within 30 days of a reinfection. The study visits took place between October 2021 and March 2024.; **Exposure:** SARS-CoV-2 infection.; **Main Outcomes and Measures:** Presence of LC and participant-reported symptoms.; **Results:** A total of 13 647 participants (11 743 with known SARS-CoV-2 infection and 1904 without known prior SARS-CoV-2 infection; median age, 45 years IQR, 34-69 years); and 73% were female) were included. Using the least absolute shrinkage and selection operator analysis regression approach from the 2023 model, symptoms contributing to the updated 2024 index included postexertional malaise, fatigue, brain fog, dizziness, palpitations, change in smell or taste, thirst, chronic cough, chest pain, shortness of breath, and sleep apnea. For the 2024 LC research index, the optimal threshold to identify participants with highly symptomatic LC was a score of 11 or greater. The 2024 index classified 20% of participants with known prior SARS-CoV-2 infection and 4% of those without known prior SARS-CoV-2 infection as having likely LC (vs 21% and 5%, respectively, using the 2023 index) and 39% of participants with known prior SARS-CoV-2 infection as having possible LC, which is a new category for the 2024 model. Cluster analysis identified 5 LC subtypes that tracked quality-of-life measures.; **Conclusions and Relevance:** The 2024 LC research index for adults builds on the 2023 index with additional data and symptoms to help researchers classify symptomatic LC and its symptom subtypes. Continued future refinement of the index will be needed as the understanding of LC evolves.

Access or request full text: <https://libkey.io/10.1001/jama.2024.24184>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39693079&prolid=e>

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17. Cost-Effectiveness of a Personalised Self-Management Intervention for People Living With Long Covid: The LISTEN Randomised Controlled Trial

Item Type: Journal Article

Authors: Harris, S. R. S.; Sewell, B.; Busse-Morris, M.; Edwards, A.; Jones, F.; Leggat, F.; Pallman, P. and Fitzsimmons, D.

Publication Date: 2025

Journal: Health Expectations : An International Journal of Public Participation in Health Care and Health Policy 28(4), pp. e70357

Abstract: Background: In the United Kingdom, at least 1.9 million people are estimated to have experienced long Covid, of which 1.3 million have symptoms lasting for more than a year. The Long Covid Personalised Self-management Support Evaluation (LISTEN) trial evaluated the effectiveness and cost-effectiveness of a co-designed personalised self-management support intervention for non-hospitalised people living with long Covid.; **Methods:** We conducted a pragmatic, multicentre, two-arm, parallel group and superiority randomised controlled trial for people who had experienced at least one long Covid symptom for 12 weeks or longer. A cost-utility analysis was undertaken alongside the LISTEN trial from both a UK National Health Service (NHS) and personal social services (PSS) and a societal perspective. Implementation costs were determined from study records, and quality of life and health and care resource use were collected by questionnaire at 6-week and 3-month follow-ups. Incremental net monetary benefit (INMB) analyses evaluated the cost-effectiveness of the intervention at a range of willingness-to-pay thresholds.; **Results:** A total of 544 participants were included in the health economic analysis, of which 62.5% had complete data. The average cost of delivering the LISTEN intervention was £846 per participant. At 3-month follow-up, mean quality-adjusted life years (QALYs) were 0.005 (95% CI -0.004 to 0.014) greater for participants receiving the LISTEN intervention compared to usual care. From the NHS and PSS perspective, total adjusted mean costs were £491 (95% CI, £128 to £854) lower in the usual care arm. From the societal perspective, participants in the usual care arm lost more hours of work and usual activities and received more informal care, with the LISTEN intervention dominating usual care.; **Conclusions:** At accepted UK thresholds, the LISTEN intervention was not cost-effective from an NHS and PSS perspective, but it was found to be cost-effective from a societal perspective due to the impact of long Covid on work, informal care and usual activities. Further research is required to understand the costs and benefits of self-management support for longer-term horizons.; **Patient and Public Contribution:** We are grateful for the contributions of the LISTEN Public and Patient Involvement and Engagement group comprising seven people (Anne Domeney, Ian Patel, Carol Rowe, Judith Parsons, Rebecca Beltran, Elizabeth Treadwell and Maria Ines de Sousa de Abreu) with long Covid who supported co-design, communications, trial recruitment and dissemination activities.; **Trial Registration:** ISRCTN36407216, registered 27 January 2022. (© 2025 The Author(s). Health Expectations published by John Wiley & Sons Ltd.)

Access or request full text: <https://libkey.io/10.1111/hex.70357>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40755156&provid=ehost>

18. Health economic outcomes and national economic impacts associated with Long COVID in England and Scotland

Item Type: Journal Article

Authors: Kwon, Joseph; Mensah, Joseph; Milne, Ruairidh; Rayner, Clare; Lawrence, Román Rocha; De Kock, Johannes; Sivan, Manoj and Petrou, Stavros

Publication Date: 2025

Journal: The European Journal of Health Economics : HEPAC : Health Economics in Prevention and Care

Abstract: Background: Two million people in the UK suffer from Long COVID (LC), imposing substantial health economic impacts. This study aimed to: 1) assess longitudinal changes in health utility scores and economic costs of LC, and number of services received at LC specialist clinics and clinic region to capture care intensity; 2) assess whether volume of services received responded to health needs; and 3) estimate the national economic impact of LC.; Methods: LC patients from 10 specialist clinics participated in the LOCOMOTION study. Patient-reported outcomes measures (EQ-5D-5L, C19-YRS and Health Economics Questionnaire) were completed on a digital platform. Associations were assessed between changes in economic outcomes (EQ-5D-3L utility, health economic costs) and number/type of LC specialist services received and region. Per-person values of quality-adjusted life-year losses, public sector costs, productivity losses and informal care costs were multiplied by LC prevalence to estimate national economic impacts.; Results: There was a statistically significant reduction in public sector costs over time. There was no significant association between the number of specialist services received and change in health utility scores. LC specialist clinic and outpatient service utilisation corresponded to health need and had significant regional variation after controlling for health need. LC is associated with a substantial economic impact nationally, estimated at £8.1 billion annually and £24.2 billion since its emergence, comparable to the annual cost of £9.4 billion for stroke.; Conclusion: The effectiveness of LC specialist clinic services warrants further research. The substantial national economic impact of LC warrants a nationwide LC care strategy. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1007/s10198-025-01788-1>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40629217&provid=ehost>

19. Personalisation at the Core of Success: Process Evaluation of the LISTEN Randomised Controlled Trial Evaluating a Personalised Self-Management Support Intervention for People Living With Long Covid

Item Type: Journal Article

Authors: Leggat, F.;Torrens-Burton, A.;Sewell, B.;Sevdalis, N.;Busse, M.;Domenech, A.;Parsons, J.;Abreu, M. I. S. and Jones, F.

Publication Date: 2025

Journal: Health Expectations : An International Journal of Public Participation in Health Care and Health Policy 28(3), pp. e70270

Abstract: Background: The development and evaluation of rehabilitation interventions designed to support people with Long Covid (LC) remains an important ongoing priority. Many people with LC experience episodic, debilitating symptoms that can reduce their ability to engage in all areas of activity. The Long Covid personalised Self-management support co-design and Evaluation (LISTEN) trial co-designed and evaluated a personalised self-management support intervention to build confidence and support people to live better with LC. This paper describes the context, implementation, mechanisms of impact and impacts from the LISTEN intervention, in comparison with usual LC services accessed within the National Health Service (NHS).;

Methods: A mixed methods process evaluation was nested within the LISTEN pragmatic, multi-site, randomised controlled trial. Data were collected from sites in England and Wales between September 2022 and January 2024. Observations and focus groups with healthcare practitioners (HCPs) delivering the intervention were conducted to assess fidelity. Standardised implementation measures, focussed on intervention feasibility, acceptability and appropriateness, were gathered from HCPs and intervention participants. Semi-structured interviews were undertaken with a subset of participants across both trial arms. Data were analysed independently using descriptive statistics, or reflexive thematic analyses, and subsequently integrated, drawing upon the Consolidated Framework for Implementation Research v2.;

Findings: Thirty-six HCPs participated in the process evaluation, and 197 intervention participants completed standardised implementation measures. Across both trial arms, 49 participants took part in semi-structured interviews. Six integrated themes were constructed from all data sources describing and illustrating links between the context, implementation, mechanisms of impact and impacts: 'Delivery during uncertainty and ambiguity', 'Diversity and consistency of usual care', 'Drivers for self-care and the impact of self-generated expertise', 'Appropriate if unexpected support', 'Personalisation at the core of success' and 'A spectrum of change'.; **Conclusion:** The LISTEN intervention is an appropriate, feasible intervention for participants and HCPs. The intervention can be delivered to a high level of fidelity following training and with ongoing HCP support. Access, receipt and perceptions of NHS LC services were variable. Personalised, relational interventions, such as LISTEN, can foster favourable impacts on confidence, knowledge and activity and are acceptable and strongly recommended within LC rehabilitation services.;

Patient or Public Contribution: The study was supported by a patient and public involvement and engagement (PPIE) group from project conception to study end. Using their lived expertise, seven people with LC supported accessible recruitment (e.g., materials), data collection (e.g., topic guides), data interpretation (e.g., theme construction and reviewing findings) and dissemination activities (e.g., online webinars).; Trial Registration: ISRCTN36407216, registered 27/01/2022. (© 2025 The Author(s). Health Expectations published by John Wiley & Sons Ltd.)

Access or request full text: <https://libkey.io/10.1111/hex.70270>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40320865&provid=ehost>

20. Rethinking 'Recovery': A Comparative Qualitative Analysis of Experiences of Intensive Care With COVID and Long Covid in the United Kingdom

Item Type: Journal Article

Authors: MacLean, A.;Driessen, A.;Hinton, L.;Nettleton, S.;Wild, C.;Anderson, E.;Brown, A.;Hoddinott, P.;O'Dwyer, C.;Ziebland, S. and Hunt, K.

Publication Date: 2025

Journal: Health Expectations : An International Journal of Public Participation in Health Care and Health Policy 28(2), pp. e70253

Abstract: Introduction: Interpretations of 'recovery' from illness are complex and influenced by many factors, not least patient expectations and experiences. This paper examines meanings of 'recovery', and how it is strived towards, drawing on the example of COVID-19 infection.; **Methods:** Drawing on qualitative interviews (n = 93) conducted in the UK between February 2021 and July 2022, we compare adults' accounts of being admitted to an Intensive Care Unit (ICU) with COVID-19 to accounts of being ill with Long COVID, defined as ongoing symptoms for at least 12 weeks postinfection. We conducted a multi-stage comparative analysis using Nvivo to organise and code the data.; **Results:** We identified similarities and differences in participants' descriptions of their 'worlds of illness'. For both groups, perceptions of recovery were shaped by the novel, unknown nature of COVID-19. Participants questioned the achievability of full restoration of prior states of health, highlighted the heterogeneity of 'recovery trajectories' and described the hard physical and emotional work of adjusting to changed selves. Themes that revealed differences in 'worlds of illness' described included the different baselines, waymarkers, and pathways of illness experiences. Differences in other people's responses to their illness were also evident. For ICU participants, hospitalisation, and especially ICU admission, conferred legitimate patient status and authenticity to their symptoms. Family, friends and healthcare professionals acknowledged their illness, celebrated their survival, and granted them latitude to recover. For Long Covid participants, their patient status often lacked comparable authenticity in others' eyes. They reported encountering a lack of recognition and understanding of their ongoing need to recover.; **Conclusions:** This study highlights how the meanings of illness ascribed by others can influence how recovery is experienced. Our findings highlight the importance of ensuring people are made to feel their illness experiences are legitimate, regardless of hospitalisation status, formal diagnosis or lack of medical knowledge and pathways. They also indicate the value of emphasising the different permutations, and lack of linearity, that recovery can take. This may help to help to guard against a lack of understanding for experiences of recovery which do not meet idealised notions.; **Patient or Public Contribution:** Both studies were guided by an advisory panel that included patient and public involvement representatives with lived experience of Intensive Care/COVID experience and Long COVID respectively. Through regular meetings with the research teams, the advisory panel had input into all aspects of the study conduct, including recruitment methods and content of the interview topic guide and feedback on preliminary analyses. The Long COVID study also included a lived experience coinvestigator who contributed to data interpretation and analysis. (© 2025 The Author(s). Health Expectations published by John Wiley & Sons Ltd.)

Access or request full text: <https://libkey.io/10.1111/hex.70253>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40200747&provid=ehost>

21. Understanding symptom clusters, diagnosis and healthcare experiences in myalgic encephalomyelitis/chronic fatigue syndrome and long COVID: a cross-sectional survey in the UK

Item Type: Journal Article

Authors: Mansoubi, Maedeh;Richards, Thomas;Ainsworth-Wells, Martine;Fleming, Russell;Leveridge, Phaedra;Shepherd, Charles and Dawes, Helen

Publication Date: 2025

Journal: BMJ Open 15(4), pp. e094658

Abstract: Objectives: This study aims to provide an in-depth analysis of the symptoms, coexisting conditions and service utilisation among people with myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and long COVID. The major research questions include the clustering of symptoms, the relationship between key factors and diagnosis time, and the perceived impact of National Institute for Health and Care Excellence (NICE) guidelines on patient care.; **Design:** Cross-sectional survey using secondary data analysis.; **Setting:** Community-based primary care level across the UK, incorporating online survey participation.; **Participants:** A total of 10 458 individuals responded to the survey, of which 8804 confirmed that they or a close friend/family member had ME/CFS or long COVID. The majority of respondents were female (83.4%), with participants from diverse regions of the UK.; **Primary and Secondary Outcome Measures:** Primary outcomes included prevalence and clustering of symptoms, time to diagnosis, and participant satisfaction with National Health Service (NHS) care, while secondary outcomes focused on symptom management strategies and the perceived effect of NICE guidelines.; **Results:** Fatigue (88.2%), postexertional malaise (78.2%), cognitive dysfunction (88.4%), pain (87.6%) and sleep disturbances (88.2%) were the most commonly reported symptoms among participants with ME/CFS, with similar patterns observed in long COVID. Time to diagnosis for ME/CFS ranged widely, with 22.1% diagnosed within 1-2 years of symptom onset and 12.9% taking more than 10 years. Despite updated NICE guidelines, only 10.1% of participants reported a positive impact on care, and satisfaction with NHS services remained low (6.9% for ME/CFS and 14.4% for long COVID).; **Conclusions:** ME/CFS and long COVID share overlapping but distinct symptom clusters, indicating common challenges in management. The findings highlight significant delays in diagnosis and low satisfaction with specialist services, suggesting a need for improved self-management resources and better-coordinated care across the NHS. (© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY. Published by BMJ Group.)

Access or request full text: <https://libkey.io/10.1136/bmjopen-2024-094658>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40180399&provid=ehost>

22. Addressing Inequalities in Long Covid Healthcare: A Mixed-Methods Study on Building Inclusive Services

Item Type: Journal Article

Authors: Mir, G.;Mullard, J.;Parkin, A.;Lee, C.;Clarke, J.;De Kock, J. H.;Prociuk, D.;Darbyshire, J. L.;Evans, S. and Sivan, M.

Publication Date: 2025

Journal: Health Expectations : An International Journal of Public Participation in Health Care and Health Policy 28(4), pp. e70336

Abstract: Background: Long Covid (LC) significantly impacts health, economic and social activities. Women, deprived, learning disability, homeless and some minority ethnic populations have high prevalence rates but low access to support, indicating health inequities in LC care.; **Aim:** To identify health inequities in LC care and inclusion strategies that align with the priorities of people with LC.; **Design and Setting:** Mixed-methods study employing qualitative data from people with LC, professional experts, LC clinic staff and primary care data from North West (NW) London GPs.; **Method:** Qualitative interviews with 23 people with LC and 18 professional experts explored the experience of diagnosis and support for people from disadvantaged groups. Framework analysis identified themes that informed the subsequent collection of clinic and primary care data. Staff from 10 LC clinics across England provided survey and qualitative data describing their initiatives to identify and reduce inequalities. Descriptive quantitative analysis of NW London adult primary care records (n = 6078), linked to hospital use across England, explored LC diagnosis and care pathways for diverse groups of people with LC.; **Results:** Study participants from disadvantaged groups reported delays in formal diagnosis and specialist referrals being initiated and had low trust in healthcare services. They described difficulties in obtaining information, advice and support as barriers to access specialist referrals. LC clinics confirmed the under-referral of those from the most disadvantaged groups compared to the general population. Primary care data confirmed under-referral of people with LC to specialist clinics; however, incomplete data across the LC clinical pathway prevented an analysis of equity in referral patterns between population groups. Clinics used various strategies to improve access and increase the flow of disadvantaged groups from primary care to LC services. Interventions included data collection to identify underserved groups, targeting outreach to primary care and community providers, adapting clinic provision and developing care pathways involving multidisciplinary teams (MDTs), primary and secondary care practitioners and third sector organisations. These activities were not widespread, however, and were particular to a few clinics.; **Conclusion:** Strategies to improve access to LC healthcare provide a starting point to explore inclusive care pathways for people with LC from disadvantaged social groups. Future research should focus on the effectiveness of initiatives to increase access to specialist LC provision among disadvantaged groups and establish greater trust in healthcare providers.; **Priorities of People With Lc for Healthcare Practice:** This study highlights the need for health system practitioners to identify under-represented groups and target inclusion initiatives at these populations in sensitive and appropriate ways. Improved diagnosis and support for such populations would be helped by training health and social care practitioners to recognise and accept the accounts of people with LC about their symptoms. Protocols that support consistent practice in referrals for specialist care are also needed. People with LC from disadvantaged groups often lack access to evidence-based sources of advice and information. Practitioners should provide information on LC while individuals are waiting to receive specialist

care and should advocate for support from employers, including work modifications.; **Patient and Public Contribution:** People with lived experience of LC were involved in the study as members of the research team and LOCOMOTION Patient Advisory Group (PAG). The PAG was involved in the wider study design, including the initial grant application, attending proposal planning meetings and helping to develop the research aim, objectives and questions. During the course of the study, the PAG met quarterly with each other and at least monthly with other research team members to review progress and feed into data collection and analysis processes. PAG members also attended a Quality Improvement Collaborative meeting involving academics and LC practitioners, which discussed initial findings from data analysis of qualitative interviews on LC inequalities. Through these meetings, the group supported and oversaw the study as a whole in terms of how data was collected, recruitment of participants, involvement in data analysis and interpretation, as well as providing more specific advice to all the individual workstreams within the study. A PPI facilitator within the study team provided training and support to PAG members in these areas and was available to respond to other needs expressed by the group. PAG members have also been involved in organising and contributing to a wide range of study dissemination events. PAG involvement throughout the study has ensured that the research is aligned with the key research priorities of people diagnosed with LC as well as those with LC symptoms but no formal diagnosis. PAG members were recruited through and linked to the LC clinics involved in the study and have helped disseminate study findings to local clinical practice, the lay public and other LC centres with which they are involved. S.E. is a PAG member from a minority ethnic background and a co-author on the paper. She has been involved in overseeing and supporting data collection and interpretation relating to inequalities affecting people with LC and has contributed to the preparation of this manuscript from an early draft to production of the final version. (© 2025 The Author(s). Health Expectations published by John Wiley & Sons Ltd.)

Access or request full text: <https://libkey.io/10.1111/hex.70336>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40600494&provid=ehost>

23. Long COVID in people with mental health disorders: a scoping review

Item Type: Journal Article

Authors: Münte, C.;Glattacker, M.;Müller, S.;Zülke, A. E.;Heinze, M.;Riedel-Heller, S. G.;Pieper, D.;Jacke, C.;Deckert, S. and Neumann, A.

Publication Date: 2025

Journal: BMC Psychiatry 25(1), pp. 669

Abstract Background: Long COVID, Post COVID Syndrome or PASC (post-acute sequelae of COVID-19), according to the World Health Organization (WHO), is defined as the continuation or development of new symptoms 3 months after the initial SARS-CoV-2 infection, with these symptoms lasting for at least 2 months with no other explanation. The term Long COVID will be used throughout this review. Little is known about individuals with pre-existing mental health conditions experiencing Long COVID. This scoping review aims to

provide an overview of these individuals, focusing on: 1) the course of mental disorders, 2) care needs, 3) utilization of healthcare services, and 4) psychosocial aspects, as outlined by the International Classification of Functioning (ICF).; **Methods:** This review followed the JBI (Joanna Briggs Institute) methodology for scoping reviews and the PRISMA extension for scoping reviews. We included reports focusing on individuals with at least one pre-existing mental health diagnosis and Long COVID. Full-text reports in English or German were included, with no geographical limitations. Literature searches were conducted in PubMed, Embase, and PsycINFO on November 1, 2023, for records published between January 2020 and October 2023. Six reviewers participated in the screening process in pairs, independently conducting study selection and data extraction. Conflicts were resolved by consensus. Citation tracking was performed, and data were summarized narratively in tables.; **Results:** From 4256 initial hits and citation tracking, 8 reports were included. The studies were heterogeneous, including chart reviews, case reports, cross-sectional, and longitudinal studies. Evidence on the impact of Long COVID on pre-existing mental health conditions was inconsistent. Most findings focused on the course of mental health disorders, ranging from symptom worsening to new symptoms of anxiety, depression, or insomnia. Evidence on mental health care needs, service utilization, and psychosocial aspects was limited.; **Conclusion:** Limited evidence suggests that individuals with pre-existing mental health disorders who experience Long COVID may be at an increased risk of worsening mental health. However, critical aspects such as care needs, service utilization, and psychosocial factors remain under-researched, highlighting the need for further studies on mental health care for Long COVID.; Review Registration: Open Science Framework <https://osf.io/tqexa> .; Clinical Trial Number: Not applicable. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12888-025-06935-9>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40597822&profiid=e_host

24. Post-COVID-19 condition in patients receiving invasive positive pressure ventilation or high flow nasal cannula therapy

Item Type: Journal Article

Authors: Numata, Soko;Nakatani, Yu;Takamatsu, Kazufumi and Yokoyama, Akihito

Publication Date: 2025

Journal: Respiratory Investigation 63(4), pp. 617–622

Abstract: Background: Invasive positive pressure ventilation (IPPV) and high-flow nasal cannula (HFNC) are often employed for severe COVID-19 patients. Such advanced respiratory support might influence the post-COVID-19 condition (PCC). Here, we investigated the potential association between advanced respiratory support and PCC.; **Methods:** This study is ancillary to the separately reported multicenter observational study that included moderate to severe COVID-19 patients who required hospitalization between September 2020 and September 2021 in Japan. PCC symptoms, chest CT images, and lung function tests were evaluated 3 months after discharge. Frequency of PCC was compared between patients with and without advanced respiratory support using propensity score matching including severity on admission.; **Results:** Among 714

participants, 100 received advanced respiratory support (IPPV: 56, HFNC: 44). Patients who received advanced respiratory support significantly more frequently had PCC symptoms, CT abnormalities, and lung dysfunction. However, comparison of propensity score-matched controls indicated no significant differences in the frequency of symptoms, although CT and lung function abnormalities remained significantly higher. Furthermore, these differences were only observed in elderly patients. There were no differences in the frequency of PCC between patients with IPPV versus HFNC therapy.; **Conclusions:** Patients treated with IPPV or HFNC showed more PCC symptoms that were largely related to the initial disease severity. CT and pulmonary function abnormalities were also more frequent in such patients, especially the elderly, although this showed no correlation with disease severity. These findings underscore the correlation between age and PCC in COVID-19 patients who received advanced respiratory support. This study was registered in the UMIN Clinical Trials Registry (UMIN-CTR) under the identifier UMIN000041168. (Copyright © 2025. Published by Elsevier B.V.)

Access or request full text: <https://libkey.io/10.1016/j.resinv.2025.05.004>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40367788&prolid=e>
[host](#)

25. Episodic disability framework in the context of Long COVID: Findings from a community-engaged international qualitative study

Item Type: Journal Article

Authors: O'Brien, K. K.;Brown, D. A.;McDuff, K.;St Clair-Sullivan, N.;Chan Carusone, S.;Thomson, C.;McCorkell, L.;Wei, H.;Goulding, S.;O'Hara, M.;Roche, N.;Stokes, R.;Kelly, M.;Cheung, A. M.;Erlandson, K. M.;Harding, R.;Vera, J. H.;Bergin, C.;Robinson, L.;Avery, L., et al

Publication Date: 2025

Journal: PloS One 20(2), pp. e0305187

Abstract: Background: Increasing numbers of adults are living with the health-related consequences of Long COVID. The Episodic Disability Framework (EDF), derived from perspectives of adults living with HIV, characterizes the multi-dimensional and episodic nature of health-related challenges (disability) experienced by an individual. Our aim was to determine the applicability of the Episodic Disability Framework to conceptualize the health-related challenges experienced among adults living with Long COVID.; **Methods:** We conducted a community-engaged qualitative descriptive study involving online semi-structured interviews. We recruited adults who self-identified as living with Long COVID via collaborator community organizations in Canada, Ireland, United Kingdom, and United States. We purposively recruited for diversity in age, gender identity, ethnicity, sexual orientation, and time since initial COVID-19 infection. We used a semi-structured interview guide informed by the EDF to explore experiences of disability living with Long COVID, specifically health-related challenges and how challenges were experienced over time. We conducted a group-based content analysis.; **Results:** Of the 40 participants, the median age was 39 years; and the majority were white (73%), women (63%), living with Long COVID for ≥ 1 year (83%). Consistent with the Episodic Disability

Framework, disability was described as multi-dimensional and episodic, characterized by unpredictable periods of health and illness. Experiences of disability were consistent with the three main components of the Framework: A) dimensions of disability (physical, cognitive, mental-emotional health challenges, difficulties with day-to-day activities, challenges to social inclusion, uncertainty); B) contextual factors, extrinsic (social support; accessibility of environment and health services; stigma and epistemic injustice) and intrinsic (living strategies; personal attributes) that exacerbate or alleviate dimensions of disability; and C) triggers that initiate episodes of disability.; **Conclusions:** The Episodic Disability Framework provides a way to conceptualize the multi-dimensional and episodic nature of disability experienced by adults living with Long COVID. The Framework provides guidance for future measurement of disability, and health and rehabilitation approaches to enhance practice, research, and policy in Long COVID. (Copyright: © 2025 O'Brien et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.)

Access or request full text: <https://libkey.io/10.1371/journal.pone.0305187>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40014600&profiid=ehost>

26. Community Engagement in Long Covid Research: Process, Evaluation and Recommendations From the Long COVID and Episodic Disability Study

Item Type: Journal Article

Authors: O'Hara, M. E.;McDuff, K.;Wei, H.;McCorkell, L.;Thomson, C.;Kelly, M.;Goulding, S.;O'Donovan, I.;O'Connell, S.;Stokes, R.;Malli, N.;St Clair-Sullivan, N.;Chan Carusone, S.;Cheung, A. M.;Erlandson, K. M.;Bannan, C.;Townsend, L.;Bergin, C.;Vera, J. H.;Harding, R., et al

Publication Date: 2025

Journal: Health Expectations : An International Journal of Public Participation in Health Care and Health Policy 28(4), pp. e70365

Abstract: Introduction: Long Covid and other infection-associated chronic condition communities have been integral in advocating for patient engagement in all stages of research, from design and conduct, and implementation, through to interpretation and knowledge translation; nevertheless, the process varies across research teams. In this paper, we (1) describe our process undertaking a community-engaged Long Covid research study; (2) evaluate our community-engaged approach, highlighting strengths and limitations with our process; and (3) identify recommendations for engaging in community-engaged patient-oriented research in Long Covid.; **Methods:** Guided by the 4PI (Principles; Purpose; Presence; Process; Impact) Framework and Patient-Led Research Scorecards, we describe our community-engaged approach within the Long COVID and Episodic Disability Study, followed by an evaluation of our community engagement using a multistage consultation with members of the Long COVID and Episodic Disability Study team. We conducted an online group-based discussion among persons with lived experiences and administered a web-based Scorecard

questionnaire rating the collaboration as it relates to four domains of patient burden, governance, integration into the research process, and organisation readiness to all members of the team, to assess strengths and limitations of our approach. Scores ranged from -2 (non-collaboration) to +2 (ideal collaboration).; **Results:** Ten team members, five of whom were persons with lived experiences, completed the Scorecard questionnaire. Median Scorecard scores ranged from +1 to +2 for all domains. Five team members with lived experiences, representing four community support groups and organisations that participated in the community-engagement discussion. We describe the practices and principles that enabled meaningful community engagement, with the strengths and limitations of our approach embedded throughout.;

Conclusion: Our community-engaged approach to the Long COVID and Episodic Disability Study enhanced the quality and relevance of the study to the community while highlighting areas to heighten meaningful engagement throughout. This study builds on foundational community-based research principles of patient-oriented research. Recommendations derived from our experiences may be used by other research teams conducting community-engaged patient-oriented research.;

Patient or Public Contribution: The Long COVID and Episodic Disability Study is a community-engaged research study involving 25 members, including 12 persons living with long Covid, 13 researchers and 5 clinicians (categories are not mutually exclusive), referred to as the Full Team. Persons with lived experiences possessed a range of professional and personal experiences spanning research, clinical, policy and private sector/business contexts; team members wore multiple hats and perspectives which collectively strengthened the diversity of expertise, perspectives and insights to the team and process. Engagement of people with lived experiences with Long Covid ensured that the study was fully co-created with people living with Long Covid. During the development of the study proposal, community partners from organisations in Canada, Ireland, the United Kingdom and the United States, who were linked to larger networks of people living with Long Covid, were purposefully invited to join the study team. Several Long Covid community networks and organisations, represented by persons living with Long Covid, were involved in all stages of the research, including: COVID Long-Haulers Support Group Canada (S.G.); Long COVID Advocacy Ireland (I.O., S.O. and R.S.); Long COVID Ireland (N.R. and R.S.); Long COVID Physio (D.A.B. and C.T.); Long Covid Support UK (M.O.H.); and Patient-Led Research Collaborative (L.M., N.M. and H.W.). These representatives along with the Co-PIs (K.K.O. and D.A.B.) and co-ordinator (K.M.) comprised the Core Long COVID and Episodic Disability Community Collaborator Team (Core Team). Team members with lived experiences were provided yearly remuneration for their time and expertise dedicated to the study, either as an individual, or to the community organisation which they represented on the study according to their preference. (© 2025 The Author(s). Health Expectations published by John Wiley & Sons Ltd.)

Access or request full text: <https://libkey.io/10.1111/hex.70365>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40783949&profid=e_host

27. The risk of Long Covid symptoms: a systematic review and meta-analysis of controlled studies

Item Type: Journal Article

Authors: O'Mahoney, L. L.;Routen, A.;Gillies, C.;Jenkins, S. A.;Almaqhawi, A.;Ayoubkhani, D.;Banerjee, A.;Brightling, C.;Calvert, M.;Cassambai, S.;Ekezie, W.;Funnell, M. P.;Welford, A.;Peace, A.;Evans, R. A.;Jeffers,

S.;Kingsnorth, A. P.;Pareek, M.;Seidu, S.;Wilkinson, T. J., et al

Publication Date: 2025

Journal: Nature Communications 16(1), pp. 4249

Abstract: The global evidence on the risk of symptoms of Long Covid in general populations infected with SARS-CoV-2 compared to uninfected comparator/control populations remains unknown. We conducted a systematic literature search using multiple electronic databases from January 1, 2022, to August 1, 2024. Included studies had ≥ 100 people with confirmed or self-reported COVID-19 at ≥ 28 days following infection onset, and an uninfected comparator/control group. Results were summarised descriptively and meta-analyses were conducted to derive pooled risk ratio estimates. 50 studies totaling 14,661,595 people were included. In all populations combined, there was an increased risk of a wide range of 39 out of 40 symptoms in those infected with SARS-CoV-2 compared to uninfected controls. The symptoms with the highest pooled relative risks were loss of smell (RR 4.31; 95% CI 2.66, 6.99), loss of taste (RR 3.71; 95% CI 2.22, 7.26), poor concentration (RR 2.68; 95% CI 1.66, 4.33), impaired memory (RR 2.53; 95% CI 1.82, 3.52), and hair loss/alopecia (RR 2.38; 95% CI 1.69, 3.33). This evidence synthesis, of 50 controlled studies with a cumulative participant count exceeding 14 million people, highlights a significant risk of diverse long-term symptoms in individuals infected with SARS-CoV-2, especially among those who were hospitalised. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1038/s41467-025-59012-w>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40335476&profiid=e_host

28. Balneotherapy for the treatment of post-COVID syndrome: a randomized controlled trial

Item Type: Journal Article

Authors: Ovejero, D.;Ribes, A.;Villar-García, J.;Trenchs-Rodriguez, M.;Lopez, D.;Nogués, X.;Güerri-Fernandez, R. and Garcia-Giralt, N.

Publication Date: 2025

Journal: BMC Complementary Medicine and Therapies 25(1), pp. 37

Abstract: Trial status: The study is completed.; **Background:** Post-Acute COVID Syndrome (PACS) is a complex disorder that currently lacks effective evidenced-based therapies to manage it. This randomized controlled trial aims to evaluate the effects of balneotherapy (BT) on PACS symptomatology.; **Methods:** Ninety-eight adults with PACS visited at Hospital del Mar Research Institute, Barcelona (Spain) were included to the study. Participants in the intervention group (n = 51) were allocated to 12 sessions of BT and aquatic exercises delivered in one month while the control group (n = 47) did not. The primary outcome was to evaluate the absolute change in questionnaire scores between baseline and two follow-up points: immediately after balneotherapy (or one-month post-baseline for the control group) and 2 months post-baseline. The following

scales/questionnaires were employed: Post-COVID-19 functional status scale, mMRC dyspnea Scale, SF-36, Pittsburgh Sleep Quality Index (PSQI), Hospital Anxiety and Depression Scale (HADS), Memory failures in everyday life following severe head injury, and Visual Analogic Scale (VAS).; **Results:** Forty-seven patients in the BT group and 43 in the control group completed the study. The majority of participants were middle-aged women (> 84%; mean age 48 years), and the most prevalent symptoms were fatigue, musculoskeletal pain, and neurocognitive impairment (> 88%). Noteworthy, the vast majority did not undergo a severe primary infection (ICU admissions < 3%). After BT, significant improvement was detected in the BT group vs. the control group in various SF-36 domains, PSQI total score (Beta-coefficient 95%CI] 2.641 1.15;4.12]; p -value = 0.003), HAD's anxiety subscale (Beta-coefficient 95%CI] 1.72 0.40;3.03;p-value = 0.023), and VAS (Beta-coefficient 95%CI] 1.625 0.32;2.96]; p-value = 0.026). Among these, SF-36's energy/fatigue and pain subscales exhibited the most prominent changes with a Beta-coefficient 95%CI] of -17.45 -24.23;-10.66] and - 21.634 -30.48;-12.78], respectively (p-value < 0.0001). No severe adverse effects were reported during BT although seventeen patients reported mild and transient worsening of preexisting symptoms, particularly fatigue/post-exertional malaise mainly in the first sessions of BT.; **Conclusion:** Balneotherapy comprise an effective therapeutic modality that can alleviate several symptoms that characterize PACS, particularly musculoskeletal pain and fatigue. However, the sustainability of these effects over time remains uncertain, as evidenced by the loss of some between-group differences at the one-month follow-up.; Trial Registration: ClinicalTrials.gov NCT05765591 (13/03/2023). (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12906-025-04784-3>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39905419&prolid=e_host

29. Medical ambivalence and Long Covid: The disconnects, entanglements, and productivities shaping ethnic minority experiences in the UK

Item Type: Journal Article

Authors: Ridge, Damien T.;Broom, Alex;Alwan, Nisreen A.;Chew-Graham, Carolyn;Smyth, Nina;Gopal, Dipesh;Kingstone, Tom;Gaszczyk, Patrycja and Begum, Samina

Publication Date: 2025

Journal: Social Science & Medicine (1982) 366, pp. 117603

Abstract: Structural violence - related to 'isms' like racism, sexism, and ableism - pertains to the ways in which social institutions harm certain groups. Such violence is critical to institutional indifference to the plight of ethnic minority people living with long-term health conditions. With only emergent literature on the lived experiences of ethnic minorities with Long Covid, we sought to investigate experiences around the interplay of illness and structural vulnerabilities. Thirty-one semi-structured interviews with a range of UK-based participants of varying ethnic minorities, ages and socio-economic situations were undertaken online between June 2022 and June 2023. A constant comparison analysis was used to develop three over-arching themes: (1) Long Covid and social recognition; (2) The violence of medical ambivalence; and (3) Pathways to recognition

and support. Findings showed that while professional recognition and support were possible, participants generally faced the spectre and deployment of a particular mode of structural violence, namely 'medical ambivalence'. The contours of medical ambivalence in the National Health Service (NHS) as an institution had consequences, including inducing or accentuating suffering via practices of care denial. Despite multiple structurally shaped ordeals (like healthcare, community stigma, and sexism), many participants were nevertheless able to gain recognition for their condition (e.g. online, religious communities). Participants with more resources were in the best position to 'cobble together' their own approaches to care and support, despite structural headwinds. (Copyright © 2024 The Authors. Published by Elsevier Ltd.. All rights reserved.)

Access or request full text: <https://libkey.io/10.1016/j.socscimed.2024.117603>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39721163&prolid=ehost>

30. Long COVID Illness: Disparities in Understanding and Receipt of Care in Emergency Department Populations

Item Type: Journal Article

Authors: Rodriguez, Robert M.;Reyes, Karen;Kumar, Vijaya Arun;Chinnock, Brian;Eucker, Stephanie A.;Rising, Kristin L.;Rafique, Zubaid;Gottlieb, Michael;Nichol, Graham;Morse, Dana;Molina, Melanie;Arreguin, Mireya I.;Shughart, Lindsey;Conn, Christopher;Eckstrand, Svea;Mesbah, Heba;Chakraborty, Lauren and Welch, Robert D.

Publication Date: 2025

Journal: Annals of Emergency Medicine 85(3), pp. 230–239

Abstract: Study Objective: Most long coronavirus disease (long COVID) studies rely on traditional surveillance methods that miss underserved populations who use emergency departments (EDs) as their primary health care source. In medically underserved ED populations, we sought to determine (1) whether there are gaps in awareness and self-declared understanding about long COVID illness, and (2) the prevalence, impact on school/work attendance, and receipt of care for long COVID symptoms.; **Methods:** This study was a cross-sectional, convenience sample survey study of adult patients at 11 geographically representative US EDs from December 2022 to October 2023. Awareness and self-declared understanding about long COVID illness were measured. Prevalence, impact on school/work attendance, and receipt of care for long COVID symptoms were also assessed.; **Results:** Of 1,618 eligible patients, 1455 (89.9%) agreed to participate, including 33.4% African Americans and 30.9% Latino/a. Of the patients, 17.1% lacked primary care. In total, 33.2% had persistent COVID-19 symptoms lasting >1 month, and 20.3% had symptoms >3 months. Moreover, 49.8% with long COVID symptoms missed work/school because of symptoms; 30.3% of all participants and 33.5% of participants who had long COVID symptoms had prior awareness and self-declared understanding of long COVID. Characteristics associated with poor understanding of long COVID were African American race (adjusted odds ratio aOR] 3.68, 95% confidence interval CI] 2.66 to 5.09) and Latino/a ethnicity (aOR 3.16, 95% CI 2.15 to 4.64). Participants lacking primary care were less likely to have received long COVID care (24.6%

versus 51.2%; difference 26.6%; 95% CI 13.7% to 36.9%).; **Conclusions:** Despite high prevalence and impact on school/work attendance of long COVID symptoms, most of this ED population had limited awareness and self-declared understanding of long COVID, and many had not received care. EDs should consider the development of protocols for diagnosis, education, and treatment of long COVID illness. (Copyright © 2024 American College of Emergency Physicians. Published by Elsevier Inc. All rights reserved.)

Access or request full text: <https://libkey.io/10.1016/j.annemergmed.2024.07.009>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39320278&prolid=e>
[host](#)

31. Post-acute sequela of COVID-19 infection in individuals with multiple sclerosis

Item Type: Journal Article

Authors: Salter, Amber;Lancia, Samantha;Cutter, Gary R.;Fox, Robert J. and Marrie, Ruth Ann

Publication Date: 2025

Journal: Multiple Sclerosis (Houndmills, Basingstoke, England) 31(3), pp. 314–323

Abstract: Background: Many common symptoms in post-acute sequelae following severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection (PASC) overlap with those of multiple sclerosis (MS). We examined symptoms and performance of the PASC score, developed in the general population, in MS based on infection history.; **Methods:** We surveyed North American Research Committee on Multiple Sclerosis (NARCOMS) registry participants regarding infections and categorized participants based on infection history. Symptoms experienced before, during, and after infection were used to identify persistent new symptoms. PASC was defined as a score ≥ 12 based on the National Institutes of Health (NIH) study RECOVER.; **Results:** Of 4787 participants surveyed, 2927 were included: 294 (10%) having recent COVID-19; 853 (29.1%) recent non-COVID-19 infection; 246 (8.4%) recent COVID-19 and non-COVID-19 infection; 1534 (52.4%) uninfected, defined as never having COVID-19 nor any infection within the past 6 months. Compared to those uninfected, infection groups reported at least a two-fold increase in fever, cough, loss of smell/taste, and shortness of breath. Based on persistent new symptoms, PASC was identified in only 1.5% of participants with COVID-19.; **Conclusion:** Our study suggests lower than expected prevalence of PASC in MS and a complex association between infections and development of new persistent symptoms following infections. The similar proportions classified with PASC across infection groups shows that symptoms of PASC are common and complicate assessment of PASC in MS.

Access or request full text: <https://libkey.io/10.1177/13524585241310104>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39749575&prolid=e>
[host](#)

32. Improvement in quality of life and cognitive function in Post-COVID syndrome after online occupational therapy: Results from a randomized controlled pilot study

Item Type: Journal Article

Authors: Schröder, D.;Stölting, A.;Müllenmeister, C.;Behrens, G. M. N.;Klawitter, S.;Klawonn, F.;Cook, A.;Wegner, N.;Wetzke, M.;Schmachtenberg, T.;Dopfer-Jablonka, A.;Müller, F. and Happle, C.

Publication Date: 2025

Journal: PloS One 20(5), pp. e0312714

Abstract: Background: Post-COVID syndrome (PCS) poses enormous clinical challenges. Occupational therapy (OT) is recommended in PCS, but structural validation of this concept is pending.; **Methods:** In an unblinded randomized pilot study (clinical trial # DRKS0026007), feasibility and effects of online OT in PCS were tested. Probands received structured online OT over 12 weeks either via interactive online treatment sessions (interactive group) or prerecorded videos (video group). 50% of probands received no online OT (control group). At week 0, 12, and 24, we analyzed study experience, health-related quality of life, cognitive functions, impairment in performance, and social participation.; **Results:** N = 158 probands (mean age 38 yrs., 86% female) were included into the analyses. The study experience was described as positive or very positive in 83.3% of probands in the interactive versus 48.1% of probands in the video group (p = 0.001). After 12 weeks, all groups displayed significant improvement in concentration, memory, and performance of daily tasks. After 24 weeks, significant improvement in concentration and memory were observed in control- and video-probands, and social participation had improved after video-OT. However, only probands in the interactive online OT group showed improvement of all measured endpoints including concentration, memory, quality of life, and social participation.; **Conclusion:** We show that online OT is feasible, and that interactive online OT is a promising treatment strategy for affected patients. We present exploratory data on its efficacy and describe variables that can be employed for further investigations in confirmatory trials. (Copyright: © 2025 Schröder et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.)

Access or request full text: <https://libkey.io/10.1371/journal.pone.0312714>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40392877&prolid=e_host

33. Therapeutic options for the treatment of post-acute sequelae of COVID-19: a scoping review

Item Type: Journal Article

Authors: Seo, Y. B.;Choi, Y. J.;Seo, J. W.;Kim, E. J.;Lee, J. and Song, J. Y.

Publication Date: 2025

Journal: BMC Infectious Diseases 25(1), pp. 731

Abstract: Objectives: This scoping review aimed to summarize the available studies to address the question of which therapeutic agents can be utilized for patients with post-acute sequelae of COVID-19 (PASC).; **Methods:** We conducted a systematic search in medical databases, including PubMed and Embase, for studies aligned with our objectives published between January 1, 2020, and July 22, 2024. For each study, we summarized the main symptoms targeted, study design, therapeutic regimens, evaluation tools, and clinical outcomes.; **Results:** A total of 413 studies were identified, and 39 studies were included in this review based on relevance to the research objectives. We primarily focused on high-level evidence studies, such as meta-analyses and randomized controlled trials, but observational studies were included when evidence was scarce. Therapeutic agents evaluated included hyperbaric oxygen, ivermectin, metformin, naltrexone, micronutrient supplements, antifibrotic agents, antiviral agents, and selective serotonin reuptake inhibitors (SSRIs). Among these, hyperbaric oxygen, antifibrotic agents, antiviral agents, and SSRIs demonstrated promising results. However, the heterogeneity of PASC symptoms posed challenges in synthesizing findings for specific symptom-based outcomes.; **Conclusion:** Given the heterogeneity of symptoms, this review highlights the need for standardized and targeted research to better address the diverse therapeutic needs of patients with PASC.; **Clinical Trial:** Not applicable. (© 2025. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12879-025-11131-x>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40405092&prolid=e>
[host](#)

34. Long COVID Syndrome, Mortality and Morbidity in Patients Hospitalized with COVID-19 From 16 Countries: The World Heart Federation Global COVID-19 Study

Item Type: Journal Article

Authors: Sliwa, Karen;Singh, Kavita;Nikhare, Kalyani;Kondal, Dimple;Raspail, Lana;Jain, Meetushi;Akter, Shahin;Talukder, Shamim Hayder;Kato, Toru;Bertagnolio, Silvia;Rylance, Jamie;Banerjee, Amitava;Narula, Jagat;Pineiro, Daniel;Perel, Pablo and Prabhakaran, Dorairaj

Publication Date: 2025

Journal: Global Heart 20(1), pp. 66

Abstract: Background: Long-term adverse consequences of the COVID-19 infection affect many organ systems, which requires comprehensive understanding of the disease burden and determinants of persistent long COVID-19 symptoms in diverse population. However, data on long COVID complications are sparse, particularly from low- and middle-income countries (LMICs). The World Heart Federation (WHF) global study assessed the incidence of vascular complications, persistent long COVID symptoms and factors associated with mortality and major adverse cardiovascular events (MACE) among patients with COVID-19 up to one year

after hospitalization.; **Methods:** We recruited a total of 2535 patients hospitalized with COVID-19 and followed up to one-year post-hospital discharge. We collected data on long COVID symptoms, quality of life, and clinical outcomes, including new onset diseases, MACE, and mortality at 1-, 3-, 6-, and 9-12 months post-discharge. Descriptive and generalized estimating equation (GEE) regression analysis was performed to assess the factors associated with mortality and MACE.; **Findings:** The majority of participants were recruited from LMICs (64%) and male (56%) with a mean (SD) age of 59.5 (20.0) years. Among those tested for COVID-19 strain (52%), Omicron strain was the most prevalent (98%). The follow-up rate at one year was 90%. Over half of the participants (56%) reported experiencing at least one major long COVID symptom (fatigue, breathlessness, anxiety, chest pain, and palpitations) at 1-month, and one-quarter participants reported persistent long COVID symptoms at 9-12 months. On the EQ-5D scale, 49% reported difficulties in usual activities, 33% reported anxiety/depression, and 23% reported problems in mobility within the first 6 months. The most frequent new-onset illnesses were pulmonary embolism (8%), kidney disease (4%), and hypertension (3%). The cumulative all-cause mortality rate was 15% (n = 382) at one-year post-discharge. Long COVID symptoms were more common among females, individuals with pre-existing comorbidities, and those with more severe acute illness. Age, obesity, ICU admission, and underlying cardiovascular or pulmonary disease were associated with increased risk of mortality and MACE.; **Conclusion:** The study showed a substantial burden of mortality and morbidity, and a quarter of patients reported at least one persistent long COVID symptom after one year. Our findings underscore the need for early identification and management of long COVID symptoms in LMICs. (Copyright: © 2025 The Author(s).)

Access or request full text: <https://libkey.io/10.5334/gh.1452>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40757253&profd=e_host

35. Autoimmunity in long COVID

Item Type: Journal Article

Authors: Talwar, Shubha;Harker, James A.;Openshaw, Peter J. M. and Thwaites, Ryan S.

Publication Date: 2025

Journal: The Journal of Allergy and Clinical Immunology 155(4), pp. 1082–1094

Abstract: Long COVID (also termed postacute sequelae of SARS-CoV-2, or PASC) affects up to 10% of people recovering from infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Diagnosis is hampered by diffuse symptomatology, lack of biomarkers, incomplete understanding of pathogenesis, and lack of validated treatments. In terms of pathogenesis, hypothesized causes include virus persistence, the legacy of endotheliitis and thrombosis, low-grade tissue-based inflammation and/or scarring, perturbation of the host virome/microbiome, or triggering of autoimmunity. Several studies show preexisting and/or de novo production of autoantibodies after infection with SARS-CoV-2, but the persistence of these antibodies and their role in causing long COVID is debated. Here, we review the mechanisms through which autoimmune responses can arise during and after viral infection, focusing on the evidence for B-cell dysregulation and

autoantibody production in acute and long COVID. (Copyright © 2025 The Authors. Published by Elsevier Inc. All rights reserved.)

Access or request full text: <https://libkey.io/10.1016/j.jaci.2025.02.005>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39956285&prolid=ehost>

36. Predictors of post-COVID-19 syndrome: a meta-analysis

Item Type: Journal Article

Authors: Wang, R.;Lin, M.;Yu, S.;Xue, X.;Hu, X. and Wang, Z.

Publication Date: 2025

Journal: Journal of Infection in Developing Countries 19(4), pp. 490–497

Abstract: Introduction: Post Coronavirus Disease 2019 (COVID-19) Syndrome also known as long COVID-19 would affect survivors of various patients. At present, the evidence for predicting a poor prognosis of COVID-19 remains insufficient. This study aims to explore potential predictors of post-COVID-19 syndrome.;

Methodology: A systematic review process and meta-analysis method are applied to identify the predictors. Systematic searches were conducted without language restrictions from December 1, 2019, to February 28, 2022, on PubMed, Embase, Google Scholar, Web of Science, and Cochrane Library using specific keywords relevant to our targets. The Newcastle Ottawa Scale observational research tool was used to assess study quality and the R (4.1.1) package meta was used for statistical analysis.;

Results: Our meta-analysis of 14 studies showed that females (OR = 1.42, 95% CI: 1.19-1.70), the severity of patients (OR = 2.43, 95% CI: 1.26-4.68), comorbidity (OR = 2.08, 95% CI: 1.29-3.35), dyspnea (OR = 2.02, 95% CI: 1.34-3.04) associated with a higher risk of post-COVID-19 syndrome.;

Conclusions: Our study showed that females, the severity of COVID-19, comorbidity, and dyspnea were associated with a higher risk of post-COVID-19 syndrome. More attention should be paid to these factors to prevent and treat post-COVID-19 syndrome. (Copyright (c) 2025 Rulin Wang, Minghui Lin, Shangqiao Yu, Xijuan Xue, Xue Hu, Zhizhong Wang.)

Access or request full text: <https://libkey.io/10.3855/jidc.18574>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40305533&prolid=ehost>

37. Patient characteristics associated with clinically coded long COVID: an OpenSAFELY study using electronic health records

Item Type: Journal Article

Authors: Wei, Yinghui;Horne, Elsie Mf;Knight, Rochelle;Cezard, Genevieve;Walker, Alex J.;Fisher, Louis;Denholm, Rachel;Taylor, Kurt;Walker, Venexia;Riley, Stephanie;Williams, Dylan M.;Willans, Robert;Davy, Simon;Bacon, Sebastian;Goldacre, Ben;Mehrkar, Amir;Denaxas, Spiros;Greaves, Felix;Silverwood, Richard J.;Sheikh, Aziz, et al

Publication Date: 2025

Journal: BJGP Open

Abstract: Background: Clinically coded long COVID cases in electronic health records are incomplete, despite reports of rising cases of long COVID.; **Aim:** To determine patient characteristics associated with clinically coded long COVID.; **Design & Setting:** With the approval of NHS England, we conducted a cohort study using electronic health records within the OpenSAFELY-TPP platform in England, to study patient characteristics associated with clinically coded long COVID from 29 January 2020 to 31 March 2022.; **Method:** We summarised the distribution of characteristics for people with clinically coded long COVID. We estimated age-sex adjusted hazard ratios and fully adjusted hazard ratios for coded long COVID. Patient characteristics included demographic factors, and health behavioural and clinical factors.; **Results:** Among 17 986 419 adults, 36 886 (0.21%) were clinically coded with long COVID. Patient characteristics associated with coded long COVID included female sex, younger age (under 60 years), obesity, living in less deprived areas, ever smoking, greater consultation frequency, and history of diagnosed asthma, mental health conditions, pre-pandemic post-viral fatigue, or psoriasis. These associations were attenuated following two-doses of COVID-19 vaccines compared to before vaccination. Differences in the predictors of coded long COVID between the pre-vaccination and post-vaccination cohorts may reflect the different patient characteristics in these two cohorts rather than the vaccination status. Incidence of coded long COVID was higher in those with hospitalised COVID than with those non-hospitalised COVID-19.; **Conclusions:** We identified variation in coded long COVID by patient characteristic. Results should be interpreted with caution as long COVID was likely under-recorded in electronic health records. (Copyright © 2025, The Authors.)

Access or request full text: <https://libkey.io/10.3399/BJGPO.2024.0140>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40500151&prolid=e>
[host](#)

38. Post-COVID-Syndrome Patients Might Overestimate Own Cognitive Impairment

Item Type: Journal Article

Authors: Wöhrstein, Sofia;Matuz, Tamara;Rötzer, Lilli and Karnath, Hans-Otto

Publication Date: 2025

Journal: European Journal of Neurology 32(5), pp. e70195

Abstract: Background: After a COVID-19 infection, some patients experience long-term consequences known as Post-Covid Syndrome, which often includes cognitive impairment. We investigated the congruence

between subjectively experienced and objectively measured cognitive deficits after a COVID-19 infection in an unselected, successively admitted cohort of 46 patients reporting subjective cognitive complaints (SCC).;

Methods: We employed a comprehensive neuropsychological test battery to assess objective cognitive impairment across various cognitive domains. Three different cut-off criteria were applied, commonly used in the literature to define objective neurocognitive disorder (NCD).; **Results:** We observed a notably low congruence between SCC and NCD in Post-Covid Syndrome, regardless of the cut-off criterion. Depending on the cognitive domain, only 4% to maximally 40% of the SCC could be objectified.; **Conclusions:** One possible explanation for this discrepancy could be the high rate of depressive symptoms observed in the group of patients studied, which may negatively influence the perception of one's cognitive abilities. These findings emphasize the need for careful evaluation of SCC in Post-Covid Syndrome and suggest that treating depressive symptoms may also alleviate some of the perceived cognitive deficits. (© 2025 The Author(s). European Journal of Neurology. published by John Wiley & Sons Ltd on behalf of European Academy of Neurology.)

Access or request full text: <https://libkey.io/10.1111/ene.70195>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40371967&prolid=e>
[host](#)

39. The impact of COVID vaccination on incidence of long COVID and healthcare resource utilisation in a primary care cohort in England, 2021-2022

Item Type: Journal Article

Authors: Yang, J.;Rai, K. K.;Alfred, T.;Massey, L.;Massey, O.;McGrath, L.;Andersen, K. M.;Tritton, T.;Tsang, C.;Butfield, R.;Reynard, C.;Mendes, D. and Nguyen, J. L.

Publication Date: 2025

Journal: BMC Infectious Diseases 25(1), pp. 214

Abstract: Background: Long COVID, a diverse set of symptoms that persist after a minimum of 4 weeks from the initial SARS-CoV-2 infection, has posed substantial burden to healthcare systems. There is some evidence that COVID-19 vaccination may be associated with lower risk of long COVID. However, little is known about the association between vaccination status and long COVID-associated healthcare resource utilisation (HCRU) and costs.; **Methods:** We conducted a cohort study using primary care electronic health record data in England from the Clinical Practice Research Datalink (CPRD) Aurum dataset linked to Hospital Episode Statistics where available. Adult (≥ 18 years) patients were indexed on a COVID-19 diagnosis between 1st March 2021 and 1st December 2021. Vaccination status was assessed at index: unvaccinated or completed primary series (two doses for immunocompetent and three doses for immunocompromised patients). Covariate balance was conducted using entropy balancing. Weighted multivariable Poisson regression was used to estimate the incidence rate ratio (IRR) for incident long COVID, and separately long COVID primary care resource use, by vaccination status. Patients were followed up to a maximum of 9-months post index.; **Results:** A total of 35,713 patients who had completed primary series vaccination, and 75,522 unvaccinated

patients were included. The weighted and adjusted IRR for long COVID among patients vaccinated with the primary series compared to being unvaccinated was 0.81 (95% CI: 0.77-0.86) in the overall cohort, 0.83 (95% CI: 0.78-0.88) in the immunocompetent cohort and 0.28 (95% CI: 0.13-0.58) in the immunocompromised cohort. Among those with long COVID, there was no association between the rate of primary care consultations and vaccination status in the overall and immunocompetent cohorts. Cost of primary care consultations was greater in the unvaccinated group than for those who completed primary series.;

Conclusion: Vaccination against COVID-19 may reduce the risk of long COVID in both immunocompetent and immunocompromised patients. However, no association was found between frequency of primary care visits and vaccination among patients diagnosed in 2021. Future studies with larger sample size, higher vaccine uptake, and longer study periods during the pandemic are needed to further quantify the impact of vaccination on long COVID. (© 2024. The Author(s).)

Access or request full text: <https://libkey.io/10.1186/s12879-024-10097-6>

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=39948466&profiid=e_host

40. Myocardial Dysfunction and Risk of Long COVID in Patients Recovered From Mild and Moderate COVID-19

Item Type: Journal Article

Authors: Zhou, Binyu;Zhang, Yiran;Han, Shuang;Zhang, Jiqing;Song, Lin and Wang, Haiyan

Publication Date: 2025

Journal: Echocardiography (Mount Kisco, N.Y.) 42(3), pp. e70120

Abstract: Purpose: Numerous recovered COVID-19 patients exhibit persistent cardiovascular symptoms. However, the degree of myocardial dysfunction and its associated risk factors remain unclear. This study aims to evaluate myocardial dysfunction in recovered patients and pinpoint predictors of persistent cardiovascular symptoms.; **Methods:** We reviewed the echocardiograms of patients who recovered from mild or moderate COVID-19 and presented with cardiovascular symptoms during the Omicron surge. Myocardial strain was analyzed in 546 patients before and after infection, and in 351 prepandemic healthy controls. Clinical follow-up at 12 months post-infection was used to evaluate symptom persistence, and multivariable logistic regression was used to identify independent predictors.; **Results:** Baseline characteristics showed no significant differences between patients and controls (all $p > 0.05$). Although the left ventricle global longitudinal strain (LVGLS) remained stable post-infection, significant reductions emerged in regional left ventricle longitudinal strains (LVLS) and all left atrial strains (LAS) (all $p < 0.05$). Persistent cardiovascular symptoms affected 16.5% (90/546) of patients at 1-year follow-up. Multivariate analysis showed that only LA conduit strain (OR = 0.919, 95% CI: 0.857, 0.985, $p = 0.017$) and basal inferoseptal LVLS (OR = 0.883, 95% CI: 0.792, 0.986, $p = 0.026$) correlated with persisting cardiovascular symptoms.; **Conclusion:** Our findings demonstrate that subclinical but persistent COVID-19-associated myocardial dysfunction is characterized by regional LVLS impairment and LAS reduction. The identified strain parameters (LAScd and basal inferoseptal

LVLS) serve as novel imaging markers for stratifying patients at risk of persistent cardiovascular symptoms. These results advocate for targeted echocardiographic surveillance and early intervention strategies in post-COVID care pathways.; Trial Registration: ClinicalTrials.gov identifier: NCT06170307. (© 2025 The Author(s). Echocardiography published by Wiley Periodicals LLC.)

Access or request full text: <https://libkey.io/10.1111/echo.70120>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mdc&AN=40029146&provid=ehost>

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