This review includes

- Methodological pitfalls and misunderstanding about Long COVID
- Multidisciplinary evaluation: Characteristics, conclusions and satisfaction
- Mental health outcomes in 24-month follow-up
- Community rehabilitation service models
- School experiences of children and young people
- Effectiveness of the ReCOVery APP

Kia ora koutou katoa.

Welcome to the 'Long COVID Literature Review' by Te Hikuwai Rangahau Hauora | The Health Services Research Centre. We aim to bring you monthly summaries of interesting literature concerning Long COVID. We prioritise Aotearoa New Zealand and Indigenous research and publications determined to be high-quality, evidence-based research.

How methodological pitfalls have created widespread misunderstanding about Long COVID

(Høeg et al., 2023)

[Find abstract here.](#)

SUMMARY:
From the opinions of three overseas experts, this paper identifies possible errors in estimations of the prevalence of Long COVID and discusses the implications of this potentially misleading research. This paper highlights that past and ongoing epidemiological research has suffered from overly broad case definitions of Long COVID and a lack of control groups, resulting in an overestimate of risk and leading to undue societal anxiety. The researchers call for better case definitions and stringent Long COVID criteria, which should include continuous symptoms after confirmed SARS-CoV-2 infection.

COMMENT:
This research serves as an important reminder that epidemiological studies should be conducted with a purposeful and careful approach. The author's statement, "Ultimately, biomedicine must seek to aid all people who are suffering", resonates deeply. However, requiring 'confirmed' SARS-CoV-2 infection for the criteria of Long COVID does not align with this goal. As Professor Lorgelly points out, establishing Long COVID symptoms linked with COVID-19 infection requires serology testing, a procedure not regularly conducted in Aotearoa New Zealand and is costly to many. Incorporating this criterion for Long COVID would further exacerbate the already profound inequities in access to care in Aotearoa New Zealand. [Find more local experts' opinions on this paper.](#)

Patients with persistent symptoms after COVID-19 attending a multidisciplinary evaluation: Characteristics, medical conclusions and satisfaction

(Gouraud et al et al., 2023)
Find abstract here.

SUMMARY:
This study describes the clinical characteristics of patients attending the CASPer-COVID Programme (a multidisciplinary day-hospital evaluation) in its first year of implementation in Paris, France, and their medical conclusions (i.e., diagnoses and recommendations). A satisfaction survey was performed at three months follow-up. Through either self-referral or referral by a practitioner, patients undergo three consecutive one-hour consultations with an internist or infectious disease specialist, a psychiatrist and an adapted physical activity specialist. After a multidisciplinary meeting between the three specialists, the patients and their general practitioner received personalised recommendations. Common self-reported symptoms by participants at the beginning of the programme included fatigue (86%), followed by shortness of breath (65%), joint or muscle pain (61%) and cognitive dysfunction (58%), with symptoms persisting for a median of 14 months. Low levels of physical activity and health-related quality of life and high levels of fatigue, anxiety, depression and psychological burden were also reported in patients' medical records at the beginning of the programme. Physical activity rehabilitation was recommended for 91% of patients. Patients' median satisfaction, measured by the overall degree of satisfaction regarding the programme, the perceived effectiveness of the programme and whether patients would recommend attending this programme, was 8/10.

COMMENT:
Most participants attending this programme presented with long-lasting symptoms and severe quality of life impairment. Of interest, participants reported high levels of satisfaction, including the programme's effectiveness (i.e., specialists' recommendations), thus offering an opportunity for participants to seek appropriate healthcare for Long COVID symptoms.

Factors associated with mental health outcomes after COVID-19: A 24-month follow-up longitudinal study

(Guillen-Burgos et al et al., 2023)
Find abstract here.

SUMMARY:
This study explores the proportion and trends of mental health issues related to mood, stress and sleep disturbances among those hospitalised with COVID-19 in the Northern region of Colombia, as well as the social and clinical associated factors. The study included 1565 participants, half of whom were male. At discharge, approximately half of the patients reported symptoms of anxiety (50%), depression (50%), post-traumatic stress disorder (PTSD) (53%) and insomnia (44%). These symptoms showed a declining trend over time, with lower risks at 12-months. After 24 months, the proportions further reduced to 17%, 22%, 35% and 24%, respectively. The study identified several social factors, including marital status, education, occupation, ethnicity and socioeconomic status, that were significantly associated with presenting mental health symptoms after 24-months of follow-up. Clinical factors, such as the location of hospital stays, physical comorbidities and severe illness of COVID-19, were also associated with mental health symptoms after 24-months of follow-up.

COMMENT:
This study identifies a high prevalence of mental health conditions that persist up to two years after severe COVID-19 illness. Of interest, the study highlights that social factors, such as education, occupation, ethnicity and socioeconomic status, are significantly associated with mental health conditions at 24-months. This finding has implications for Māori and for Pacific communities in Aotearoa New Zealand, among whom structural discrimination has resulted in higher levels of socioeconomic deprivation, exacerbated by the COVID-19 pandemic.

Perceptions and experiences of different Long COVID community rehabilitation service models from the perspectives of people living with Long COVID and healthcare professionals [Preprint]

(Duncan et al et al., 2023)

Find abstract here.

SUMMARY:
Through the perceptions of patients and healthcare professionals (i.e., staff delivering and/or managing community rehabilitation services and staff involved in the strategic planning around Long COVID), this study explores their experiences associated with four different service models in Scotland. Three key themes were identified: (i) Accessing care for people with Long COVID; (ii) Understanding Long COVID and its management; and (iii) Strengths and limitations of existing Long COVID rehabilitation services. Barriers for people with Long COVID were related to unclear referral pathways and demand-capacity issues. Short-term funding and the reluctance to promote existing services due to fear of exceeding capacity were key operational barriers. Patients with Long COVID also commented on the reluctance of health professionals to provide a diagnosis. This was further expanded by health professionals noting their discomfort in associating patients with labels, given the lack of definitive evidence. Health professionals also mentioned the lack of information to support best practice management of Long COVID, leading to staff anxiety. Facilitators included flexible services with clear referral pathways, multidisciplinary teamwork and external support sources.

COMMENT:
This study emphasises the importance of streamlined pathways, multidisciplinary collaboration and a need for accessible information in Long COVID rehabilitation.

Mātauranga Raranga

Long COVID Registry
Aotearoa New Zealand

https://www.lcregistry.auckland.ac.nz/

Impact of Long COVID on the school experiences of children and young people: A qualitative study

(MacLean et al et al., 2023)

Find abstract here.

SUMMARY:
This study explores the impact of Long COVID on the school experiences of children and young people. Interviews were conducted with 22 children and young people aged 10 to 18 years old and 15 parents/caregivers. Three key themes were identified: (i) Most children and young people expressed a strong desire to return to school, viewing it as a means of regaining some normality. Extended school absences were described as stressful and isolating, causing feelings of being left behind. (ii) Re-engaging with school invariably leads to relapses of symptoms or feeling exhausted, followed by more time off. Children and young people had to learn how to manage the demands of school without pushing to breaking point; this often meant concentrating on fewer school subjects or restricting after-school activities. (iii) School responses to Long COVID varied and were sometimes hindered by communication challenges with healthcare professionals. Even with medical documentation, some participants still encountered scepticism and a lack of understanding. Participants viewed supportive school responses as those that demonstrated flexibility and responsiveness, implementing adjustments to accommodate symptoms, and staff taking the condition seriously.

COMMENT:
This study provides the narratives of children and young people, and parents/caregivers about Long COVID's impacts on school experiences, as well as suggests strategies in which schools can help children and young people regain some sense of normality.

LONG COVID REVIEW

For more literature concerning Long COVID, you can visit '**Lit COVID**', a website library for tracking up-to-date scientific information about COVID-19 and Long COVID.

Similarly, you can follow 'LongCovidPapers' on **Twitter** (@LongCovidPapers) for notifications of research papers from PubMed and MedRxiv

Effectiveness of ReCOVery APP to improve the quality of life of Long COVID patients: A 6-month follow-up randomised clinical trial [Preprint].
(Samper-Pardo et al., 2023)

Find abstract here.

SUMMARY:
This study examines the effectiveness of a digital tool with rehabilitation content based on clinical guidelines and evidence called 'ReCOVery APP', for those diagnosed with Long COVID for six months, compared to usual treatment. The app offers information on various aspects, including food, rest and sleep, physical exercises, breathing exercises, cognitive and exercises, and community participation. All participants continued with their treatment-as-usual, and patients assigned to the intervention group had access to the ReCOVery-APP for 24-weeks, as well as attending three sessions hosted by psychologists based on motivational methodology, app management and strengthening their personal constructs (i.e., health literacy, self-efficacy and personal activation). A total of 80 participants took part in this study, of which 42 were involved in the intervention group. The mean use of the app was 840 minutes over 24-weeks (an average of five minutes per day), and only seven participants made significant use of the app (fifteen minutes a day, five days a week for 24-weeks). Overall, participants had low adherence to the app. This study found the ReCOVery APP did not significantly improve a patient's overall quality of life over the 24-weeks follow-up. Non-significant improvements were observed in the intervention group, particularly in mental health, cognitive, physical and activation ability, and health literacy, as well as a greater decrease in the number of persistent symptoms. It was also found that patterns of improvement in quality of life were predicted by time of app use and self-efficacy.

COMMENT:
Interestingly, the ReCOVery APP did not significantly improve patient's quality of life with Long COVID at 24-months. As highlighted by researchers, low adherence may justify the lack of improvement demonstrated in the study's findings. Addressing adherence to the app and future apps for those with Long COVID will be pivotal. Failure to do so may mean future research might struggle to yield positive results without addressing this issue.

If you or your family member has Long COVID and are interested in being involved in future Long COVID research, please contact us at:

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