“A Light at the End of the Tunnel” – Post-COVID-Condition and the Role of a Rehabilitation and Recovery Intervention Delivered in a Football Club Community Trust: A Qualitative Study

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Article

"A Light at the End of the Tunnel" - Post-COVID-Condition and the Role of a Rehabilitation and Recovery Intervention Delivered in a Football Club Community Trust: A Qualitative Study

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Abstract: Background/Objectives: This study explored the lived experiences of individuals with post-COVID condition (PCC) who participated in a 12-week exercise rehabilitation and recovery program (PCCRRP) delivered by a professional football club community trust (FCCT). The aim was to understand the effects of the program on physical function and quality of life (QoL). **Methods**: A qualitative approach was employed, involving semi-structured interviews with seven participants following the 12-week PCCRRP. Thematic analysis was used to analyse the interview data. **Results**: Participants reported improvements in exercise capacity, fatigue, and breathlessness, leading to enhanced physical function and QoL. They also experienced improvements in emotional well-being, including increased confidence and reduced anxiety. The program's focus on tailored exercise plans empowered participants to manage their symptoms and regain control over their lives. **Conclusions**: The PCCRRP delivered by an FCCT had positive effects on the physical function and QoL of individuals with PCC. This highlights the potential of FCCTs in providing effective rehabilitation and support for individuals with PCC

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1. Introduction

During the initial wave of the COVID-19 pandemic in 2020, it became evident that a significant number of individuals were experiencing persistent symptoms weeks and months after their initial Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection [3]. This condition, known as post-acute sequelae of SARS-CoV-2 infection (PASC), long COVID, or post-COVID condition (PCC) [25], can affect individuals of all ages and across the spectrum of acute COVID-19 severity (3). The projected increase in PCC cases led the Royal College of General Practitioners (RCGP) to call for a swift review of General Practitioner (GP) practice provisions to effectively manage this influx of patients [14]. By the end of 2021, the Institute for Health Metrics and Evaluation [27] estimated that 3.92 billion individuals had been infected with SARS-CoV-2, with an estimated 144.7 million developing PCC. Of those with PCC, 22 million experienced persistent symptoms 12 months after the initial infection [27].

PCC is recognised as a multisystem disease characterised by a wide range of symptoms, including fatigue, post-exertional malaise, dyspnoea, cognitive impairment, headache, and musculoskeletal pain, all of which significantly impair daily functioning [15]. The most notable consequence of PCC is a diminished quality of life (QoL) and functional capacity, stemming from

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heightened sensitivity to physical, emotional, orthostatic, and cognitive stressors. These stressors trigger and intensify cyclical symptoms, hindering engagement in daily routines such as work, social interaction, and family responsibilities [9]. Given the increasing body of evidence highlighting shared symptomatology between PCC and other chronic conditions like fibromyalgia and myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) [4] condition-specific rehabilitation may not be the most efficient use of scarce resources [24]. Nevertheless, various PCC rehabilitation approaches have been developed [6]. The challenge lies in tailoring community rehabilitation services to effectively address the unique needs of each individual with PCC, considering the diverse physical, psychological, and vocational manifestations of PCC, while maximising scarce resources.

In recent years, there has been a growing interest in utilising professional football clubs to enhance health and well-being outcomes within their local communities [7,17,18,20]. Football Club Community Trusts (FCCTs) are the community arms and registered charities of professional football clubs. They leverage the branding of sport and the power of the club badge, supported by local partners and linked to their parent football club, to offer programs that package interventions aimed at improving physical activity (PA), reducing cardiovascular disease (CVD) risk factors, mental well-being and social interaction [18] and Cancer rehabilitation exercise [20]. Cardiovascular disease, metabolic syndrome, and inactivity-related conditions present not only huge personal harm to individual sufferers and their families due to loss of functionality, livelihood, and pain, but also significant financial burden to the UK health care services [21]. As healthcare systems continue to grapple with the long-term effects of the pandemic, there is growing interest in the potential of exercise and PA as part of a rehabilitation strategy for individuals with PCC [19]. In June 2021 Burton Albion Community Trust (BACT), the community arm of Burton Albion Football Club (BAFC) began the pilot delivery of a post-COVID condition rehabilitation and recovery program (PCCRRP) to help individuals experiencing PCC. This initiative was part of a broader pilot project in Staffordshire, funded by the National Health Service (NHS), to address the ongoing challenges of PCC and support those affected by the condition. Furthermore, to alleviate the pressure on an already overstretched NHS.

While emerging evidence suggests potential benefits of exercise in managing PCC symptoms [12,19,22,29], there is a lack of qualitative research exploring the experiences and perspectives of individuals engaging in exercise and PA as part of their recovery. Given the success of FCCTs in promoting health and well-being in various populations [2,7,17,18,20], it is crucial to explore their potential in addressing the needs of individuals with PCC. Understanding the lived experiences of individuals suffering with PCC is crucial for developing effective and patient-centred rehabilitation and recovery programs. This qualitative study aims to address this gap by exploring the experiences, beliefs, and attitudes of individuals with PCC towards exercise and PA and how these factors influence their recovery journey. Moreover, it aims to provide in-depth participant accounts to better understand outcome-level data. Therefore, the aim of this study is to explore the lived experience of individuals who participated in an exercise rehabilitation and recovery program delivered by an FCCT and its effects on the physical function and QoL of individuals with PCC. 2. Results

The qualitative interviews conducted with PCC patients revealed several key themes (Table 2) related to their experiences with the illness and participation in a PCCRRP. These themes include the physical and emotional impact of PCC, challenges with diagnosis and medical care, coping mechanisms and support systems, and the recovery and rehabilitation process.

Table 2. Themes, sub-themes and participant quotes related to their experience of PCCRRP.

Theme	Sub-Theme	Quote
Physical Impact of Post-COVID-Condition	Initial Symptoms	"I couldn't walk up the stairs without really being out of breath, and it was such an energy drain"

 doi:10.20944/preprints202504.1436.v1

		(Female)
	Duration of symptoms	“Towards the end of the day I'd be so exhausted” (Female)
		“I did not feel well for six months, I just did not feel right” (Male)
	Impact on daily life	"I couldn't walk that far at all." (Male)
		"Getting dressed and housework just didn't really happen. I think my husband probably picked up a lot of the day-to-day stuff, things like cleaning the house and preparing the meals. If I did anything I would try to take the dogs for a walk, but literally the next day I'd feel so tired my whole body just felt drained. I couldn't do anything the next day" (Female)
Emotional and Psychological Impact	Emotional Distress	"I just used to cry loads. I was really grouchy” (Female)
	Anxiety and Fear	“A lot of it was the mental side of it for me. I was having flashbacks from COVID-19 the first time, a lot of anxiety and panic attacks”. (Female)
	Hope	“The doctor mentioned about what Burton Albion were doing and I just thought it would be really good to help me. It felt that was a bit of a light at the end of the tunnel."

 doi:10.20944/preprints202504.1436.v1

		(Male)
	Impact on Mental Health	“I was just exhausted all the time and struggling with the mental health side of it as well." (Female)
	Impact on Self-Esteem	“Part of me was relieved that there was a diagnosis, but part was also really embarrassed as well. Why is it me? Why have I got post-COVID-condition and everyone else seems to have caught COVID and been fine. Why am I really struggling? Am I to blame? Is it because I'm carrying a bit of extra weight? Is it because I'm not looking after myself as well? (Female)
	Positive Changes	"Now I feel like I'm living a happy life, and I make the effort. I will make an effort to go out and it's great, feeling better about yourself." (Female)
Diagnosis and Medical Care	Delayed Diagnosis	“I was diagnosed with post-COVID-condition about June 2021, a long time after initial infection” (Female)
	Limited Medical Guidance	“Getting through to my GP was really difficult. Eventually I was referred to a post-COVID-condition clinic and they were really good. They put me in touch with Burton Albion” (Female)
		"The GP gave me the diagnosis of a post-COVID-condition. He didn't

 doi:10.20944/preprints202504.1436.v1

		give me any advice, nothing at all! He's a really great doctor and I've never heard anyone say anything bad about him but there wasn't really any advice". (Female)
	Referral to the Program	"It bothered me going into the gym the first time. I was scared, but then I was thinking positively as well, I just wanted to get better" (Female)
Coping Mechanisms and Support	Partner's Support	"I didn't get much support off my partner at first and I was really struggling. I know if I tried to hoover the house then that'll be it. Then I'd be shattered for a couple of hours." (Female)
Recovery and Rehabilitation	Exercise Program	"I enjoyed going and got into a routine of going and I wasn't worn out afterwards. Eventually I was just going home, and I'd be fine" (Male)
		" I like the fact that I got to go at my own pace. I didn't feel like I was being rushed. I like the fact as well that I was allowed time to build my own confidence in the gym. It was like, well, what do you feel comfortable doing today? What do you want to try? I like the fact that it was led by me and what I enjoy doing." (Female)
	Positive Impact on Daily Life	"Now I am back cooking meals. No more ready meals! Sometimes I cook

 doi:10.20944/preprints202504.1436.v1

	three meals at the same time depending on work." (Female)

3. Discussion

The PCCRRP delivered by a FCCT elicit perceived positive effects on the physical function and QoL of individuals with PCC. Participants reported improvements in exercise capacity, fatigue, and breathlessness, all of which contributed to perceived enhanced physical function and QoL. Interestingly, no participants reported experiencing a worsening of symptoms after physical exertion, limiting their ability to engage in activities and necessitating rest and recovery periods such as that reported by Thomas et al. [23]. Participants expressed experiencing improvements in emotional well-being, feeling more confident and less worried which aligns with Gerlis et al. [10]. These perceived improvements, coupled with the emotional support and validation received during the PCCRRP, led to increased confidence, reduced anxiety, and an overall improvement in their QoL. The PCCRRP focus on tailored exercise plans empowered participants to manage their symptoms and regain control over their lives, ultimately enhancing their overall well-being. The following overarching themes were generated from the data.

3.1. Physical and Emotional Impact of Post-COVID Condition

Consistent with previous literature [5,6,8,10,11,22,23,28,29], participants reported experiencing a wide range of persistent and debilitating physical symptoms, including fatigue, cognitive dysfunction, muscle weakness, pain, and breathlessness, prior to participation on the PCCRRP, which significantly impacted their ability to perform daily activities, work, and maintain family and social roles. Although not reporting directly on patient experiences, Clauw and Calabrese [4] similarly highlights the overlap in symptomatology between PCC and fibromyalgia, particularly fatigue, cognitive dysfunction, and various forms of pain. This suggests that individuals with PCC may experience similar physical and emotional impacts as those with fibromyalgia. Indeed, the physical symptoms often led to a decline in functional ability, making everyday tasks like walking, housework, and even concentrating on simple activities challenging and exhausting similar to that observed by Thomas et al. [23]. Furthermore, the chronic and unpredictable nature of PCC led to a loss of personal identity and a sense of grief for their pre-illness selves. Moreover, participants felt they were no longer the same person and struggled to come to terms with their new reality. Often comparing themselves to healthy individuals or their pre-illness state, led to feelings of frustration, inadequacy, and a sense of being left behind as others moved on with their lives as previously reported [23].

The emotional and psychological burden of PCC was also substantial, with participants reporting depression, anxiety, panic attacks, guilt, and a loss of self-esteem. Furthermore, as observed in Humphreys et al. [11], these physical and psychological symptoms were often intertwined, with physical incapacitation exacerbating emotional distress and vice versa. These findings underscore the need for comprehensive interventions that address both the physical and psychological aspects of PCC recovery, such as the tailored advice and support for managing exercise delivered by the PCCRRP.

3.2. Diagnosis and Medical Care

Consistent with previous research [11], a recurring theme in the data was the delay in receiving a PCC diagnosis and the limited guidance and support provided by healthcare professionals. Participants expressed frustration with the limited availability and slow pace of healthcare services for PCC as previously reported [23]. Participants stated that existing services were not equipped to handle the complex and multifaceted nature of the condition. Furthermore, they often felt their

 doi:10.20944/preprints202504.1436.v1

concerns were not taken seriously due to the lack of understanding and specific treatment options for PCC, leading to frustration, self-blame, and isolation. Moreover, similarly to Thomas et al. [23] participants report feeling that healthcare providers, particularly GPs, lacked awareness and understanding of PCC, leading to delays in diagnosis and inadequate support. The lack of recognition and validation from healthcare providers caused further frustration and anger among participants, who felt dismissed and misunderstood as previously reported by Owen et al. (16). Moreover, this aligns with the findings of Cooper et al. [6], who reported that GPs were often reluctant to diagnose PCC due to the absence of a definitive diagnostic test and limited treatment options. This reluctance stemmed from the complexities of the condition, with its wide range of symptoms and the challenge of differentiating it from other chronic conditions like CFS/ME and fibromyalgia [4]. Furthermore, GPs also faced difficulties identifying appropriate referral services, as PCC did not neatly fit into existing rehabilitation pathways [23]. Consequently, patients often turned to online communities and self-management strategies, highlighting the need for better education and support for both patients and healthcare providers. These platforms offered a space for individuals to connect with others experiencing similar challenges, fostering a sense of community and shared understanding. However, Humphreys et al. [11] cautioned about the potential for misinformation and conflicting advice within these online spaces, emphasizing the importance of professional guidance and reliable information sources. Consequently, due to the lack of available medical support, some participants resorted to experimental treatments, which sometimes worsened their symptoms as previously reported [23].

While the present study did not specifically investigate the impact of the PCCRRP on the diagnostic process, it suggests that referral to the program was often a turning point for participants. The PCCRRP offered a structured approach to managing symptoms, providing a sense of hope, validation and "a light at the end of the tunnel" for individuals who had previously felt dismissed or misunderstood. This highlights the potential for specialised PCC services to not only aid in recovery but also to improve the diagnostic experience for patients.

3.3. Coping Mechanisms and Support

Participants in this study, similarly to Smith et al. [22] and Gerlis et al. [10], found the rehabilitation program itself to be a significant coping mechanism. The structured routine, social interaction, and professional guidance fostered a sense of hope and progress, contributing to improved mental well-being and QoL. The personalised support offered within the program was crucial in empowering participants to manage their symptoms and develop effective coping strategies as previously reported in the literature [10]. This was particularly important given the lack of awareness and understanding of PCC in the wider community and healthcare system at the time.

The importance of peer support was also evident in this study, aligning with the findings of Cooper et al. [6] and Gerlis et al. [10]. Connecting with others who shared similar experiences validated participants' struggles and reduced feelings of isolation. However, the potential negative impacts of online support groups, such as exposure to misinformation and negativity, were also acknowledged, underscoring the need for moderated and reliable online resources. Interestingly, Jimeno-Almazan et al. [13] found that, compared to current WHO recommendations, a supervised, tailored concurrent training program at low to moderate intensity for both resistance and endurance training is a more effective, safe, and well-tolerated intervention in PCC.

While family and friends played a crucial role in providing emotional and practical support, as reported in the current study, Humphreys et al. [11] highlighted the potential for online communities to serve as valuable coping mechanisms, as previously alluded to.

3.4. Rehabilitation and Recovery

The positive impacts of rehabilitation programs on both physical and mental well-being are well-documented in the literature. The current study, consistent with findings from Smith et al. [22], Jimeno-Almazan et al. [13] Gerlis et al. [10], Daynes et al. [8] demonstrates perceived significant

 doi:10.20944/preprints202504.1436.v1

improvements in physical function and QoL following rehabilitation. These studies collectively highlight the importance of exercise in improving physical function and reducing fatigue in individuals with PCC. The structured routine and social interaction aspects of the PCCRRP program echo the positive experiences reported in Smith et al. [22] and Gerlis et al. [10], emphasizing the value of group-based rehabilitation in fostering peer support, motivation, and adherence to the program, ultimately contributing to improved mental well-being. Moreover, participants express feelings of validation and assurance from the program displaying appreciation for the support and encouragement received from the staff, as reported previously in the literature [10]. A key factor of the PCCRRP was its 12-week duration, aligning with patient preferences for a longer program to address the complex and long-term nature of PCC symptoms (10).

The PCCRRP yielded perceived positive effects on participants' mental well-being, mitigating anxiety and depression, reducing brain fog, and fostering increased confidence and self-esteem. Engaging in regular exercise, under the guidance of trained professionals, helped to alleviate anxiety, depression, and fatigue commonly associated with PCC. The program's emphasis on gradual progression and personalised exercise plans instilled a sense of accomplishment and empowerment, contributing to improved mood and overall mental health. The program's emphasis on empowering participants to regain control aligns with the focus on self-management strategies found in Humphreys et al. [11] and Smith et al. [22], highlighting the importance of equipping individuals with the tools to manage their symptoms and gradually increase activity. The holistic benefits of the PCCRRP enabled participants to resume daily activities and re-establish meaningful connections with their loved ones, with the overwhelmingly positive experience serving as a catalyst for sustained engagement in exercise and the prioritisation of physical and mental health beyond the program's conclusion. The social interaction fostered within the program also played a role in reducing feelings of isolation and promoting a supportive environment for recovery.

While the PCCRRP emphasizes structured exercise as a core component, it is important to note that other studies, such as Humphreys et al. [11] and Gerlis et al. [10], advocate for a broader perspective on rehabilitation, incorporating education, self-management strategies, and psychological support alongside exercise. This study recognises the comprehensive nature of rehabilitation programs is crucial to address the multifaceted challenges faced by individuals with PCC.

3.5. Strengths and Limitations

A key strength of this study is the PCCRRP demonstrated perceived significant and clinically meaningful improvements in physical function and QoL. Furthermore, the PCCRRP addresses both physical and mental health aspects of PCC, recognising the interconnectedness of these domains and providing comprehensive support for patients. Moreover, the program's focus on empowering participants to manage their symptoms and gradually increase activity levels through exercise aligns with the emphasis on self-management strategies found in other studies, promoting long-term health benefits.

We acknowledge the need for further investigation with a larger sample size. A larger sample size improves the generalisability of the findings, making them more applicable to a wider population. The absence of a control group makes it difficult to definitively attribute all observed benefits solely to the program, as other factors like social interaction and support from specialists could also contribute to improvements. Furthermore, the majority of participants were female and of White British ethnicity, limiting the generalisability of the findings to more diverse populations.

3.6. Future Recommendations

Future research should prioritise the development of standardised outcome measures, encompassing a wider range of physical and psychological parameters, including exercise capacity, cognitive function, and healthcare utilisation. This will facilitate a more robust comparison and

 doi:10.20944/preprints202504.1436.v1

evaluation of different rehabilitation approaches, ultimately leading to the development of optimal, evidence-based interventions for individuals suffering with PCC.

4. Materials and Methods

A qualitative approach was employed to gain an in-depth understanding of individuals' experiences with PCC rehabilitation and its impact on physical function and QoL. All participants were adults aged 18 years or older who had undergone a medical assessment at the PCC clinic by their primary care provider (PCP). Participants were referred to BACT, by their PCP to undertake a post-COVID condition rehabilitation and recovery program (PCCRRP). Participants were then recruited from BACT by Birmingham City University (BCU) to participate in this study. The PCCRRP utilised a 12-week personalised exercise referral scheme (ERS) delivered twice weekly within a community setting. The PCCRRP included supervised low-to-moderate intensity exercise sessions consisting of a combination of aerobic, stability and mobility, and strength-based exercises. Inclusion criteria for the PCCRRP included a previous diagnosis of COVID-19 with a current negative test result, age 18 or older, ability to walk independently for at least 20 metres, and access to transportation to attend gym-based sessions. Exclusion criteria included active COVID-19 symptoms (positive test), already receiving community-based rehabilitation, a diagnosis of ME/CFS, or a formal diagnosis of Post-Traumatic Stress Disorder (PTSD), clinically significant anxiety, or depression. Prior to providing informed consent, all participants received comprehensive information about the intervention, including its rationale, methodology, potential benefits, and risks. Participation was voluntary, and participants were informed they could decline or withdraw without consequence prior to data analysis. Ethical approval for this study was granted by the BCU Health, Education and Life Sciences Faculty Academic Ethics Committee (ID#10203).

Table 1. Summary of demographic profile.

Variable	Total (%)
Age	
52 ± 8.54 years.	
Gender	
Male	2 (28.57)
Female	5 (71.43)
Marital Status	
Married/With Partner	5 (71.43)
Single/Divorced/Widow	2 (28.57)
Other	
Ethnicity	
White British	7 (100)
Occupation	
Care	4 (57.1)
Education	1 (14.3)
Manual Labour	1 (14.3)
Unemployed	1 (14.3)
Football Fan	3 (42.9)
Non-Football Fan	4 (57.1)
Fan of Host Club	0 (0)
Fan of Another club	3 (42.9)

4.1. Interview Procedures

Individual interviews were conducted with seven participants (Table 1) following the 12-week PCCRRP. The first author (SR), who had maintained prolonged contact with the participants through baseline assessment and delivery of the PCCRRP, conducted the interviews. The use of semi-structured interview questions, developed by all the authors (SR, LG, AH, AK, IK), allowed for flexibility and encouraged participants to share their thoughts and experiences freely. All interviews were conducted face-to-face and digitally recorded for audio at BAFC.

 doi:10.20944/preprints202504.1436.v1

4.2. Data Analysis

Following the interviews, the recorded audio files were transcribed verbatim. Thematic analysis was employed, utilising a six-step process of familiarisation, coding, generating themes, reviewing themes, defining and naming themes, and writing up [1]. For the interview data, after transcription and immersion in the transcripts until saturation, coding revealed intriguing features within the data. These features were subsequently grouped into coherent themes. These themes and sub-themes were further reviewed by LG, AK, AH and IK for confirmation and clarification, ensuring the accuracy and authenticity of the captured information. To mitigate potential bias, pilot questions were tested beforehand to refine the interview structure and ensure the relevance of the collected data.

5. Conclusions

The present study would suggest that a multi-faceted approach to coping with PCC is essential. This includes emotional and practical support from family and friends, professional mental health care when needed, participation in structured rehabilitation exercise programs, and access to reliable information and peer support networks. The diverse range of coping mechanisms highlights the importance of personalised care and support tailored to the individual needs and preferences of those living with PCC.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.
Conflicts of Interest: The authors declare no conflicts of interest

References

1. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
2. Bunn, C., Wyke, S., Gray, C. M., Maclean, A., & Hunt, K. (2016). 'Coz football is what we all have': Masculinities, practice, performance and effervescence in a gender-sensitised weight-loss and healthy living programme for men. Sociology of Health & Illness, 38(5), 812–828.
3. Centers for Disease Control and Prevention. (2024). Long COVID basics. Centers for Disease Control and Prevention. https://www.cdc.gov/covid/long-term-effects/index.html
4. Clauw, D. J., & Calabrese, L. (2024). Rheumatology and Long COVID: lessons from the study of fibromyalgia. Arthritis & Rheumatology, 76(3), 361-368. https://doi.org/10.1136/ard-2023-224250
5. Collie, S., Saggers, R. T., Bandini, R., Steenkamp, L., Champion, J., Gray, G., ... & Patricios, J. (2022). Association between regular physical activity and the protective effect of vaccination against SARS-CoV-2 in a South African case–control study. British Journal of Sports Medicine.
6. Cooper, K., Duncan, E., Hart-Winks, E., Cowie, J., Shim, J., Stage, E., ... & Swinton, P. (2024). Exploring the perceptions and experiences of community rehabilitation for Long COVID from the perspectives of Scottish general practitioners' and people living with Long COVID: a qualitative study. BMJ Open, 14, e082830.
7. Curran, K., Rosenbaum, S., Parnell, D., Stubbs, B., Pringle, A., & Hargreaves, J. (2017). Tackling mental health: The role of professional football clubs. Sport in Society, 20(2), 281-291. https://doi.org/10.1080/17430437.2016.1173910

 doi:10.20944/preprints202504.1436.v1

8. Daynes, E., Gerlis, C., Chaplin, E., Gardiner, N., & Singh, S. J. (2021). Early experiences of rehabilitation for individuals post-COVID to improve fatigue, breathlessness exercise capacity and cognition–A cohort study. Chronic Respiratory Disease, 18, 14799731211015691.
9. Faghy, M. A., Duncan, R., Hume, E., Gough, L., Roscoe, C., Laddu, D., Arena, R., Asthon, R. E. M., & Dalton, C. (2024). Developing effective strategies to optimise physical activity and cardiorespiratory fitness in the long COVID population- The need for caution and objective assessment. Progress in Cardiovascular Diseases, 83, 62–70. https://doi.org/10.1016/j.pcad.2024.03.003
10. Gerlis, C., Barradell, A., Gardiner, N. Y., Chaplin, E., Goddard, A., Singh, S. J., & Daynes, E. (2022). The Recovery Journey and the Rehabilitation Boat-A qualitative study to explore experiences of COVID-19 rehabilitation. Chronic Respiratory Disease, 19, 14799731221114266.
11. Humphreys, H., Kilby, L., Kudiersky, N., & Copeland, R. (2021). Long COVID and the role of physical activity: A qualitative study. BMJ Open, 11, e047632.
12. Jimeno-Almazán, A., Buendía-Romero, Á., Martínez-Cava, A., Franco-López, F., Sánchez-Alcaraz, B. J., Courel-Ibáñez, J., & Pallarés, J. G. (2022). Effects of a concurrent training, respiratory muscle exercise, and self-management recommendations on recovery from post-COVID-19 conditions: The RECOVE trial. Journal of Applied Physiology, 134(1), 95–104. https://doi.org/10.1152/japplphysiol.00489.2022
13. Jimeno-Almazán, A., Franco-López, F., Buendía-Romero, Á., Martínez-Cava, A., Sánchez-Agar, J. A., Sánchez-Alcaraz Martínez, B. J., Courel-Ibáñez, J., & Pallarés, J. G. (2022). Rehabilitation for post-COVID-19 condition through a supervised exercise intervention: A randomized controlled trial. Scandinavian journal of medicine & science in sports, 32(12), 1791–1801. https://doi.org/10.1111/sms.14240
14. Mahase, E. (2020). What do we know about Long COVID? British Medical Journal. https://doi:10.1136/bmj.m2815
15. Meys, R., Delbressine, J. M., Goërtz, Y. M. J., Vaes, A. W., Machado, F. V. C., Van Herck, M., & Houben-Wilke, S. (2020). Generic and respiratory-specific quality of life in non-hospitalized patients with COVID-19. Journal of Clinical Medicine, 9(12), 3993.
16. Owen, R., Ashton, R., Skipper, L., Phillips, B., Yates, J., Thomas, C., Ferro, F., Bewick, T., Haggan, K., Faghy, M. (2023). Long COVID quality of life and healthcare experiences in the UK: a mixed method online survey. Quality of life research https://doi.org/10.1007/s11136-023-03513-y
17. Parnell, D., Pringle, A., Widdop, P., & Zwolinsky, S. (2015). Understanding Football as a vehicle for Enhancing Social Inclusion: Using an Intervention Mapping Framework. Social Inclusion, 3(3), 158-166. https://doi.org/10.17645/si.v3i3.231
18. Pringle, A., Zwolinsky, S., & Lozano-Sufrategui, L. (2021). Investigating the delivery of health improvement interventions through professional football club community trusts - strengths and challenges. Public Health in Practice, 2, 100009. https://doi.org/10.1016/j.puhip.2021.100009
19. Romanet, C., Wormser, J., Fels, A., Lucas, P., Prudat, C., Sacco, E., Bruel, C., Plantefève, G., Pene, F., Chatellier, G., & Philippart, F. (2023). Effectiveness of exercise training on the dyspnoea of individuals with long COVID: A randomised controlled multicentre trial. Annals of Physical & Rehabilitation Medicine, 66(5), 101765. https://doi.org/10.1016/j.rehab.2023.101765
20. Rutherford, Z., Zwolinsky, S., Kime, N., & Pringle, A. (2021). A Mixed-Methods Evaluation of CARE (Cancer & Rehabilitation Exercise): A Physical Activity and Health Intervention, Delivered in a Community Football Trust. International Journal of Environmental Research and Public Health, 18(6), 3327. https://doi.org/10.3390/ijerph18063327
21. Scarborough, P., Bhatnagar, P., Wickramasinghe, K. K., Allender, S., Foster, C., & Rayner, M. (2011). The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: An update to 2006-07 NHS costs. Journal of Public Health, 33(4), 527–535. https://doi.org/10.1093/pubmed/fdr033
22. Smith, J. L., Deighton, K., Innes, A. Q., Holl, M., Mould, L., Liao, Z., ... & Kelly, B. M. (2023). Improved clinical outcomes in response to a 12-week blended digital and community-based long-COVID-19 rehabilitation programme. Frontiers in Medicine, 10, 1149922.

 doi:10.20944/preprints202504.1436.v1

23. Thomas, C., Faghy, M. A., Owen, R., Yates, J., Ferraro, F., Bewick, T., Haggan, K., & Ashton, R. E. M. (2023). Lived experience of patients with Long COVID: A qualitative study in the UK. BMJ Open, 13(4), e068481. https://doi.org/10.1136/bmjopen-2022-068481
24. Wade, D. T. (2020). Rehabilitation after COVID-19: An evidence-based approach. The future of rehabilitation in NHS. Clinical Medicine, 20, 359–365. https://doi.org/10.7861/clinmed.2020-0353
25. World Health Organization. (2021). A clinical case definition of post COVID-19 condition by a Delphi consensus. World Health Organization. https://www.who.int/publications/i/item/WHO-2019-nCoV-Post_COVID-19_condition-Clinical_case_definition-2021.1
26. World Health Organization. (2023). Post COVID-19 condition. [Fact sheet]. World Health Organization Regional Office for Europe. https://www.who.int/europe/news-room/fact-sheets/item/post-covid-19-condition
27. World Health Organization. (2024). Post COVID-19 condition. World Health Organization. https://www.who.int/teams/health-care-readiness/post-covid-19-condition
28. Wright, J., Astill, S. L., & Sivan, M. (2022). The Relationship between Physical Activity and Long COVID: A Cross-Sectional Study. International Journal of Environmental Research and Public Health, 19(9), 5093.
29. Zheng, C., Chen, X., Sit, C. H., Liang, X., Li, M., Ma, A. C., & Wong, S. H. (2024). Effect of Physical Exercise–Based Rehabilitation on Long COVID: A Systematic Review and Meta-analysis. Medicine and Science in Sports and Exercise, 56(1), 143–154.