Flexible, Accessible, Effective: Patient Perceptions of the Pulmonary Hypertension and Home-Based (PHAHB) Physical Activity Intervention

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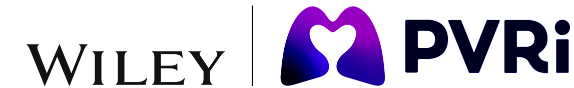

RESEARCH ARTICLE OPEN ACCESS

Flexible, Accessible, Effective: Patient Perceptions of the Pulmonary Hypertension and Home-Based (PHAHB) Physical Activity Intervention

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ABSTRACT

Pulmonary hypertension (PH) is a progressive condition associated with reduced physical activity and impaired quality of life. While exercise training is now recognised as a safe and beneficial adjunct to PH management, opportunities for supervised programmes remain limited. There is a growing need for person-centred, acceptable interventions that enable patients to engage safely and meaningfully in physical activity within their own environment. The aim of this study was to explore the lived experiences of individuals with PH who participated in a 10-week, home-based exercise programme, and to evaluate its acceptability, utility, and perceived impact. Semi-structured interviews were conducted with participants ($N = 13$) diagnosed with precapillary PH, specifically pulmonary arterial hypertension (PAH) and chronic thromboembolic pulmonary hypertension (CTEPH), who completed the intervention. Data was analysed thematically to identify core themes reflecting patient experiences and perceived changes. Thematic analysis revealed four key themes: convenience and accessibility, development of exercise self-regulation skills, support and accountability, and perceived improvements in physical fitness and well-being. Person-centred, behaviourally informed home-based exercise interventions can help individuals with PH exercise safely, overcome fear, enhance self-efficacy, and re-engage with physical activity. These findings provide patient-driven insights to guide the design and implementation of scalable exercise models for the PH population.

1 | Introduction

Pulmonary hypertension (PH) is a chronic, progressive disease characterised by elevated pulmonary artery pressure and vascular resistance, leading to right heart failure. Hallmark symptoms include exertional dyspnoea and severe fatigue, resulting in marked reductions in exercise capacity and overall quality of life (QoL) [1]. Despite advancements in pharmaceutical treatments, many patients with PH continue to experience these debilitating symptoms. Such ongoing limitations, combined with fears of overexertion and potential harm, often discourage engagement in physical activity (PA) [2], further contributing to declines in physical function and QoL.

Research has shown, compared to age and sex matched controls, that patients with PH are more sedentary and have a reduced health-related quality of life (HRQoL) [3–5]. Structured exercise training can provide a supportive environment for PA

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engagement. Despite previous concerns, research has shown that exercise is both safe and well tolerated in stable patients with PH [6–9] and has demonstrated significant benefits in enhancing physical function and QoL in individuals with PH [10–12]. Exercise training is now recognised as an important adjunctive therapy and is endorsed by international guidelines, including those from the European Society of Cardiology (ESC)/ European Respiratory Society (ERS) and the American Thoracic Society (ATS) [13, 14].

Traditional exercise rehabilitation in PH is typically offered in controlled specialised centres, which can be burdensome for many patients. In recent years, home-based exercise programmes have been proposed as a pragmatic alternative to improve access. Primary findings from home-based studies with either supervised or clinic visits included [15–18] or fully remote [19] have demonstrated positive outcomes in increasing PA, physical function and QoL among PH patients.

Despite growing recognition of the benefits of exercise for people with PH, there remains a critical gap in understanding how home-based interventions are experienced in real-world contexts. Chia et al., [20] recently explored PH patients experience of participating in structured outpatients exercise interventions and concluded that these programmes can increase knowledge, confidence, and have a positive impact on PA perceptions [20]. However, to date, no qualitative study has explored the experiences of engagement with a remote home-based exercise intervention amongst those with PH, limiting our understanding of how and why interventions might succeed or fail in practice. While assessing clinical outcomes is essential, exploring the patient experience offers unique insights into behavioural, emotional, and contextual factors that shape engagement. These include motivations, perceived barriers, intervention usability, and real-world feasibility elements often overlooked in quantitative analyses [21]. Such understanding is vital for informing intervention refinement, future trial design, and scalable models of care.

Accordingly, this study used semi-structured interviews to explore the experiences of individuals with PH completion of the 10-week home-based Pulmonary Hypertension and Home-Based (PHAHB) exercise intervention. Participants included individuals with precapillary PH, specifically pulmonary arterial hypertension (PAH) and chronic thromboembolic pulmonary hypertension (CTEPH). The aim was to assess the utility and acceptability of the pilot intervention from the patients' perspective. This study addresses a pressing need for practical, real-world insight to inform the development of interventions that are not only clinically effective, but also meaningful, acceptable, and sustainable for individuals living with PH.

2 | Methods

2.1 | Study Design

This qualitative study is part of the mixed-methods evaluation of the 10-week home-based exercise intervention. Quantitative results have been previously reported in detail [22]. The current study reports qualitative results from semi-structured interviews with participants within 2 weeks following the end of the intervention. It conformed to the suggested recommendations of the standard for Reporting Qualitative research (SRQR) checklist [23].

2.2 | Participants

Twenty participants were recruited to the PHAHB intervention, and all completed it, except for one participant who was hospitalised for unrelated reasons. Of the 19 participants, 89% agreed to take part. Inclusion criteria were a confirmed diagnosis of precapillary PH, including PAH and CTEPH and completion of at least 80% of prescribed intervention sessions as previously outlined [19].

2.3 | Intervention

The PHAHB intervention was a 10-week, fully remote, patient-centred PA intervention for individuals living with PH. It was underpinned by Social Cognitive Theory (SCT) and incorporated established behaviour change techniques (BCTs) (i.e., goal setting, action planning, and self-monitoring) known to support PA uptake.

The intervention was based on formative research with PH patients that explored PA, exercise preferences, exercise barriers, and support needs [2, 24] and also previous distance-based, smart wearable PA intervention in chronic disease [25, 26]. The intervention has been described previously [22]. In brief, the 10-week intervention consists of the following components: Three 60–90 min induction educational sessions, five 30-min health coaching sessions, and an exercise programme combining aerobic, resistance, and respiratory training sessions. Participants also received a stationary bicycle, customised exercise videos, PA manual and logbook, and a Fitbit Charge 3 and devices for home monitoring, including a blood pressure monitor, pulse oximeter, and a real-time heart/respiratory monitor (Frontier X). The intervention was delivered by a clinical exercise physiologist (CEP).

2.4 | Data Collection

To ensure participant convenience, interviews were conducted virtually or via phone. A semi-structured interview guide was developed to explore acceptability and utility of the intervention, while remaining open to capturing other experiences of the participant [27, 28]. All 19 participants were invited to participate in an interview after they completed the 10-week follow-up assessments, with all interviews conducted within 2 weeks of participant completion. The interviews were conducted by a researcher trained in qualitative data collection who was not involved in the intervention's development or delivery in order to foster openness regarding experiences of PHAHB. All interviews were audio recorded and transcribed verbatim.

2.5 | Data Analysis

Interview data were analysed using reflexive thematic [29] analysis following Braun and Clarke's six-step framework [30]. This approach recognises the active role of the researcher in interpreting meaning within qualitative data and supports the

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development of themes through an iterative and reflexive engagement with the dataset. Transcripts were read repeatedly to ensure familiarity, and initial codes were generated inductively through line-by-line coding. Related codes were then organised into candidate themes, which were reviewed, refined, and structured into a thematic map to capture shared and divergent experiences.

To enhance rigour, a second qualitative researcher independently reviewed the transcripts and contributed to coding, theme development, and interpretation. In line with reflexive thematic analysis, themes were developed through ongoing engagement with the data and researcher's interpretation rather than through deductive coding frameworks. It is acknowledged that interpretations are constructed by the researcher and context dependent and therefore different interpretations are possible. Nevertheless, we aimed to achieve credibility and trustworthiness in the analysis produced through regular discussions between members of the research team supported reflexive consideration of coding decisions and theme development, allowing interpretations to be refined through collaborative dialogue and critical reflection [31]. Credibility was further supported through transparent reporting of analytic procedures and the inclusion of illustrative participant quotations to provide depth and contextual grounding for the themes presented [32].

2.6 | Participant Demographics

Thirteen participants (76%) were interviewed, the majority were women ($n = 11$), aged between 29 and 70 years. Eleven participants had PAH (85%) and two had CTEPH (15%). The remaining 13% were unable to complete the interview within the 2-week time frame. Participant demographics are outlined in Table 1. Interview duration was between 30 and 50 min.

TABLE 1 | Participants characteristics.

Clinical characteristics	
Gender (Male:Female)	3:10
Age (yrs)	51 ± 13.40
Distance from NPHU (km)	116.81 ± 119.02
PH-specific diagnosis	
PAH	11 (85)
CTEPH	2 (15)
Duration of diagnosis (yrs)	7 ± 4.51
QoL -Emphasis – 10 (total score)	
Pre-intervention	23.84 ± 9.12
Post-intervention	20.28 ± 8.02
6MWD (m)	
Pre-intervention	381.84 ± 62.54
Post-intervention	451.92 ± 67.64

Note: Continuous variables are presented as mean ± standard deviation. Categorical variables are *n* (%).
Abbreviations: 6MWD, 6 min walk distance; CTEPH, chronic thromboembolic pulmonary hypertension; NPHU, National Pulmonary Hypertension Unit; PAH, pulmonary arterial hypertension; PH, pulmonary hypertension; QoL, quality of life.

3 | Results

Thematic analysis revealed four key themes: (i) convenience and accessibility of the home-based programme, (ii) development of exercise self-regulation skills, (iii) support and accountability, and (iv) perceived improvements in physical fitness and well-being (Figure 1). These themes collectively highlight the acceptability of the intervention, the barriers it addressed, and the meaningful impact on participants' lives.

3.1 | Convenience and Accessibility

Participants consistently emphasised the value of the home-based nature of the PHAHB intervention, describing it as convenient, flexible, and accessible. The ability to exercise in a familiar setting contributed to a sense of ease and independence; *"To be able to do it in your own environment, in your own house, it was great altogether"* (PH-12). This familiarity also alleviated potential discomfort associated with gym-based exercise; *"I would be very embarrassed in a gym"* (PH-06).

A key advantage highlighted was the flexibility to complete exercise at a time that suited personal schedules. Participants appreciated the autonomy to structure their sessions according to daily routines: "*I certainly would be in favour of the home approach wherever possible… Once you get it at home, it really offers great independence. I mean you're the master of everything you can control, when you do it, you know, for how long"* (PH-03). This flexibility also allowed for exercise to be split into multiple sessions: *"I'll do the bike twice a day on the days I'm not able to get out for a walk."* (PH-12).

Several participants reported that the home-based setting fostered a greater sense of personal responsibility and long-term sustainability: *"I think when you're at home, there's a certain level of personal responsibility. You're in your normal environment, your equipment is here, and it just feels more sustainable in the long term"* (PH-15).

The provision of home exercise equipment further enhanced accessibility. Participants highlighted the practicality of having equipment readily available, making exercise more feasible: *"It has set up an exercise regime in my own home that I found easy to follow and carry out… I think it has made it very accessible"* (PH-21); *"You can do it in your pyjamas, for goodness' sake. It's not effortful to get to do the exercises. Doing it at home kind of imprinted in me in these 10 weeks that it's possible to do all this exercise at home"* (PH-02).

While outdoor walking was preferred over stationary cycling by some, the exercise bike served as a crucial alternative, particularly in poor weather: *"There would have been days I wouldn't have been able to do my exercise without the bike. If the weather was too bad to walk, the bike was essential"* (PH-17).

This was especially important for individuals during the winter months when conditions associated with PH are normally more aggravated: *"I have scleroderma and Reynaud's, so going out for walks in winter wasn't really an option. Having the bike indoors was really beneficial"* (PH-13).

Participants also found the pre-recorded exercise videos helpful, as they provided visual modelling and demonstration of correct technique. This simulated an in-person experience and

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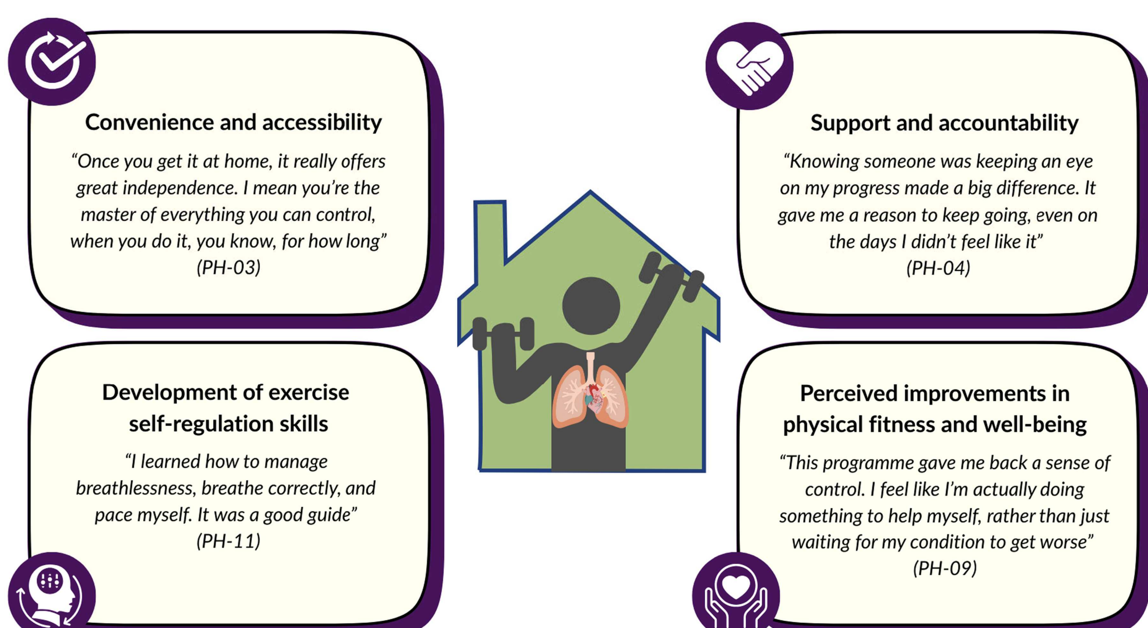

FIGURE 1 | Visual summary of themes with illustrative quotation.

supported participants in performing exercises more confidently and accurately: *"I found the videos very helpful because I used to put my phone up on the mantelpiece and follow her as if I was at a class" (PH-13).*

Another significant advantage reported was the elimination of travel-related burdens. Participants emphasised how this reduced fatigue associated with travel and removed a key barrier to participation: *"I didn't have to travel, which made a huge difference. If I had, I wouldn't have been fit for anything"* (PH-06).

This was particularly relevant for individuals in full-time employment: *"One of the barriers for me was time. The home programme was so convenient. If I had to leave the house, drive to a gym, and exercise there, I probably wouldn't have done it"* (PH-15).

3.2 | Development of Exercise Self-Regulation Skills

A dominant theme emerging from participants' experiences was the development of exercise self-regulation skills, specifically the ability to monitor symptoms, adjust intensity, and pace activity appropriately. These skills were fostered progressively through guided exposure to structured exercise and tailored support. Participants described learning to interpret their body's responses, apply pacing or recovery strategies, and manage breathlessness safely: *"The programme showed me ways to do exercise with PH that I was scared of doing… So it showed me I can do this and I don't need to be scared" (PH-18).*

Developing breathlessness management strategies was described as a key outcome of the programme. Many participants reported gaining confidence in regulating their breathing and applying practical tools to manage discomfort: *"I have learnt to pace myself, breathe better. I learnt I was going to get out of breath, but I was going to get through it… I knew I wasn't in danger" (PH-06)*; *"I learned how to manage breathlessness, breathe correctly, and pace myself. It was a good guide" (PH-11).*

Participants also described using structured monitoring tools, such as the RPE scale, heart rate, and Fitbits, to guide their activity. These tools enhanced self-awareness and confidence in adjusting exercise intensity safely: *"I used my Fitbit during my walk to see my heart rate… I aimed to stay within a Borg scale of 3–4, moderately hard" (PH-21)*; *"Putting myself under a little bit of stress… was incredibly helpful because I now understand that some breathlessness is good, and I feel confident knowing what intensity I can handle" (PH-02).*

For many, gaining clarity on safe intensity, pace, and duration increased motivation and readiness to continue exercising independently: *"I'd had the bike sitting there, but I never had the confidence. Now I know the intensity, pace, and duration I can manage" (PH-01).*

Self-monitoring and goal-setting through the Fitbit and exercise logbook further supported motivation and accountability:

> *I set different goals, and the Fitbit was a convenient way to check distances walked/cycled, steps taken, and minutes of cardio.*
>
> (PH-21)

> *There were weeks I thought I wasn't doing much, but when I saw it written down (in log book), I realised I had actually done a lot. It lifted me up and motivated me to do more.*
>
> (PH-06)

Many reported that they planned to continue using the logbook as a self-monitoring and planning tool after the programme had ended: *"I might keep up a log for myself, aiming for two walks, one bike session, and some strength exercises each week" (PH-09).*

Ultimately, the structured and supportive nature of the programme appeared to shift participants' attitudes and confidence toward exercise, even among those initially hesitant: *"Before*

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this, I wasn't walking much… but I actually became more motivated to walk. Eventually, I didn't have to be pushed out the door—I wanted to go" (PH-06).

3.3 | Support and Accountability

Participants consistently emphasised the central role of support and accountability in sustaining their motivation and engagement throughout the intervention. A key component was the ongoing relationship with the CEP, whose expertise, encouragement, and non-judgemental approach helped build trust and confidence: *"You could ask XXX anything. She was very kind, very approachable, so that support was always there"* (PH-13); *"She really knew how to connect"* (PH-21).

Although the programme was delivered remotely, the structured guidance and human connection provided a sense of accountability and belonging. Several participants described how this support helped combat feelings of isolation: *"Knowing someone was keeping an eye on my progress made a big difference. It gave me a reason to keep going, even on the days I didn't feel like it*" (PH-04).*"It's easy to feel alone when you have a condition like this. But knowing there was someone checking in, encouraging me, and helping me adjust things if needed—that made me feel supported*" (PH-11).

The clarity and structure of the intervention also provided reassurance and reduced uncertainty around safe exercise: *"I always worried I'd push myself too hard or do something wrong. But this gave me confidence because I knew the exercises were designed for someone like me" (PH-02*; *"It's easy to put things off when you're doing it on your own. But this gave me a reason to show up for myself*" (PH-01).

3.4 | Perceived Improvements in Physical Fitness and Well-Being

All participants reported perceived improvements in their physical fitness, functional ability, and overall well-being. Many described noticeable gains in cardiovascular fitness, reporting reduced breathlessness during daily tasks and exercise sessions. Improvements in the ability to perform activities of daily living, such as stair climbing and walking, were particularly valued: *"I found that like now I can come up the stairs and I'm not as breathless… So that's a big improvement"* (PH-01). *"Before this, I could only manage 10 min of a walk… that was 10 min of stopping and starting… but now I did a 37-min walk there … It was brilliant. I couldn't have done that before"* (PH-06).

Participants also reported increased strength, flexibility, and physical resilience, often noticing improvements through tangible outcomes such as weight loss or reduced fatigue: *"My thigh muscles feel a lot stronger"* (PH-13); *"I've definitely lost an inch or two and feel more flexible"* (PH-15).

These physical gains were accompanied by improvements in energy levels, sleep quality, and emotional well-being. Several participants noted that feeling physically tired after structured activity improved sleep, while others highlighted the programme's impact on mood and motivation during difficult times: *"I was sleeping better… I had tired myself out enough to sleep rather than just sitting in front of the telly all day"* (PH-06); *"Having a structured programme helped me this winter… I didn't feel symptoms of depression, and I had more energy to do things"* (PH-13).

Several participants described a renewed sense of autonomy and personal achievement, with physical gains translating into improved confidence and independence in daily life:

> *I realised how inactive I had become… I'm stronger now and feel like I can get back to 90% of a normal life.*
> (PH-21)

> *I used to drive to the village, but now I walk the 2 km there and back… It gives me a real sense of achievement.*
> (PH-21)

Importantly, the experience of improvement reframed many participants' beliefs about what they were capable of, offering a renewed sense of hope and control over their health: *"This programme gave me back a sense of control. I feel like I'm actually doing something to help myself, rather than just waiting for my condition to get worse"* (PH-09); *"I had kind of given up on the idea that I could exercise. Now, I know I can, and that changes everything"* (PH-07).

These reflections highlight how perceived physical gains often acted as a catalyst for broader psychosocial improvements, helping participants reimagine what was possible for their lives with PH.

4 | Discussion

The qualitative findings from this study highlight the acceptability, utility, and perceived impact of the PHAHB pilot intervention. Participants described the programme as empowering, enjoyable, and confidence-building, reflecting enhanced self-efficacy, motivation, and autonomy in managing PA. To our knowledge, no prior research has explored the acceptability or impact of a fully remote PA intervention in PH patients. These qualitative insights complement and extend previously published quantitative data demonstrating significant improvements in self-efficacy domains, physical function, PA engagement, and QoL following the PHAHB intervention [19]. Participants reported meaningful improvements in physical function and psychological well-being, including increased walking capacity, strength, and confidence in daily activities. These findings mirror those observed in supervised exercise training studies in PH populations and reinforce the growing evidence supporting exercise training as a safe and effective strategy to reduce disease-related limitations and enhance functional independence and QoL in PH populations [12, 33, 34].

This study provides new insights into the lived experience of PH patients participating in exercise interventions. While recent work by Chia et al., [20] showed that structured outpatient programmes can enhance confidence and perceptions of exercise among people with PH, our findings extend this by demonstrating comparable experiences through a fully remote model. This model addressed accessibility challenges commonly associated with traditional centre-based rehabilitation [35] and is particularly relevant in PH, where specialised centres are often located in major urban areas, limiting access for patients

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nationwide. Participants valued the flexibility, and autonomy of exercising at home and within the constraints of their daily lives. These findings align with growing evidence supporting remote and home-based models for chronic disease management, particularly for populations with limited access to specialist rehabilitation services [36, 37]. However, it remains important to consider individual preferences and disease severity when offering exercise programmes. Consistent with previously reported exercise preferences [20, 24, 38, 39], PH-specialised centres should adopt flexible delivery models, offering supervised, hybrid, or fully remote options to enhance accessibility and patient choice.

The PHAHB intervention was purposefully developed to address known patient barriers, such as fear of exertion, uncertainty about safety, limited PH-specific PA knowledge, and restricted access to supervised care [2, 24, 39]. By embedding safety education and evidence-based BCTs within a personalised, home-based format, the intervention fostered participants' trust, confidence, and motivation enabling self-regulation, sustained engagement, and a shift toward autonomous motivation [40–44]. This approach highlights the potential of PHAHB to empower individuals with PH to take ownership of their PA in a safe, supportive, and flexible environment, suggesting a promising person-centred model that may inform the development of clinical trials to explore such scalable approaches to PH rehabilitation.

The integration of wearable technology emerged as a valuable component of the PHAHB intervention. Participants frequently cited the wrist-worn device as a source of real-time feedback, motivation, and accountability, which enhanced their engagement with the intervention consistent with previous research findings in cancer survivors [45]. Furthermore, wearable devices have also demonstrated cost-effectiveness in supporting PA adherence in chronic respiratory populations [46]. In the context of PH, where fear of overexertion and uncertainty about safe intensity levels are common barriers [24], wearable technology offers a practical solution to enhance self-efficacy and safety.

A unique and defining feature of the PHAHB intervention was the individualised shared-decision making approach to exercise prescription and progression, delivered through structured health coaching sessions with a CEP, which has not been previously described in PH rehabilitation. Participants valued collaborating with the CEP to set goals and adapt training to their needs, fostering autonomy, which is known to enhance motivation, and long-term adherence to PA [47]. The CEP's expertise in PH pathophysiology and behaviour change built trust and alleviated fears of symptom exacerbation, an enabler previously highlighted in the literature [19, 39]. Participants described the CEP as a trusted source of knowledge and motivation, underscoring the value of therapeutic alliance.

The CEP also supported broader lifestyle modification, promoting sustainable health behaviours. This holistic, person-centred approach reflects best practices in chronic disease rehabilitation and highlighting the potential for CEPs to serve as integral members of multidisciplinary teams supporting PH care. The remote model supported by consistent contact with the CEP enabled flexible engagement without compromising individualisation or human contact. Research on patients' perceptions of digital health interventions indicates a desire to remain human contact experienced during more traditional consultations [48]. These findings reinforce the idea that digital readiness and relational care can coexist, creating a feasible and equitable model for PH rehabilitation delivery.

4.1 | Clinical Implications

While this exploratory study provides valuable patient-informed insight into the acceptability and perceived utility of the PHAHB intervention, the central role of the CEP warrants consideration when evaluating wider implementation. The expertise, guidance, and therapeutic rapport provided by the CEP appeared to play a critical role in supporting participant engagement, confidence, and adherence to the programme. However, reliance on specialist supervision may present challenges for scalability and resource allocation within routine PH services. Wider implementation would likely require investment in workforce training, service redesign, and clearly defined referral pathways to ensure equitable access to exercise support. Furthermore, the close CEP–patient relationship, while beneficial for engagement, may risk fostering over-reliance, potentially undermining long-term self-management and independent exercise participation, if structured tapering or transition strategies are not in place. Future research should therefore explore the optimal intensity and duration of professional support required to initiate and sustain behaviour change, as well as the long-term maintenance of PA following programme completion. Overall, these findings provide preliminary evidence to support the acceptability and utility of remotely delivered PA interventions in PH. Further work is necessary to establish the effectiveness, scalability, and cost-effectiveness of such interventions prior to implementation within routine care.

4.2 | Strengths and Limitations

A key strength of this study lies in its mixed-methods approach, providing rich insights into both functional outcomes and the lived experience of participants, which offers a nuanced understanding of how and why the intervention was deemed useful. However, several limitations should be acknowledged. The sample size was modest and would not fully capture the diversity of the broader population living with PH. Interviews were required to be completed within a 2-week time frame following programme completion, which may have limited participation for some individuals. Participants were self-selected and may therefore have been more motivated, health-literate, or positively disposed toward exercise interventions than the wider PH population. Furthermore, the qualitative findings reflect the experiences of individuals who successfully completed the exercise programme. All participants who completed the intervention ($n = 19$) achieved the predefined adherence threshold ($> 80\%$) and were invited to participate in the qualitative interviews, of whom 13 took part. As such, the findings may over-represent more positive perspectives regarding the feasibility and acceptability of the programme. The views of individuals who declined participation were not captured. The findings should be interpreted as exploratory and

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hypothesis-generating and future research would benefit from purposive sampling strategies designed to capture a wider range of experiences, including those of individuals who decline initial participation, encounter greater barriers to engagement, or demonstrate lower adherence to exercise interventions.

5 | Conclusion

This exploratory study demonstrates that a personalised, home-based exercise intervention may be both acceptable and useful for individuals with PH, while also providing HRQoL benefits. Participants described how supportive and flexible programme delivery helped foster autonomy, trust, and self-efficacy, enabling them to reframe their relationship with PA from one of fear and limitation to one of possibility and empowerment. As the field of PH continues to move toward more holistic and patient-centred models of care, these findings provide preliminary patient-informed insight into the potential role of remotely delivered home-based exercise interventions. As a pilot study, this work offers practical insights to inform the development and evaluation of larger-scale trials examining the effectiveness, scalability, and long-term sustainability of home-based exercise interventions within PH care.

Author Contributions

Ciara McCormack convinced original idea. Brona Kehoe, Niall M. Moyna, Sarah J. Hardcastle, and Sean Gaine were involved in supporting the study design and study implementation. Emer Morahan was involved with the data collection. Qualitative data were analysed by Ciara McCormack, Sarah J. Hardcastle, and Brona Kehoe. Ciara McCormack drafted original manuscript. Sarah J Hardcastle, Brona Kehoe, Niall Moyna, Sarah Cullivan, Sean Gaine, and Brian McCullagh revised the manuscript critically. All authors read and approved this final manuscript.

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Ethics Statement

Ethical approval was obtained from the Mater Misericordiae Institutional Review Board (ref. 1/378/2032) and Dublin City University Research Ethics (DCUREC/2018/246).

Consent

All participants signed consent forms to participate in this research.

Conflicts of Interest

Prof Gaine has received honoraria from a number of companies involved in PH, including Johnson&Johnson and MSD.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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