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# 'You must have lived it': learning from the views of physiotherapists who worked during the COVID-19 pandemic

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## ABSTRACT

**Background:** The COVID-19 pandemic has resulted in a total of 676 million cases of infection and 6.9 million deaths. During a pandemic, healthcare workers are exposed to psychological stressors such as high risk of infection, inadequate protection, and isolation, which could have implications for their wellbeing.

**Aims:** The purpose of this qualitative literature review carried out systematically was to examine the views of physiotherapists who worked with COVID-19 patients during the COVID-19 pandemic to identify how physiotherapy services might be better prepared for future pandemics.

**Methods:** A systematic search was carried out across four databases (CINAHL, MEDLINE, PsycINFO, SPORTDISCUS) to identify relevant studies. Studies were assessed for quality and data extracted and analysed using thematic synthesis.

**Results:** A total of 631 studies were identified through the search strategy and screened against the inclusion/exclusion criteria. Six papers met the inclusion criteria. Four themes were identified from the perspective of the physiotherapy participants: lack of resources; emotional impact; coping strategies and integration; and value within the multidisciplinary team.

**Conclusion:** Overall qualitative evidence around the views of physiotherapists who worked during the COVID-19 pandemic is limited. An insight into the views of participants may help healthcare organisations support physiotherapy services to be better prepared in the event of a future pandemic, specifically addressing the need to strengthen supply chains, advocating for physiotherapy as a profession in low-income counties and psychological resilience. Future research should focus on identifying the most effective support options and strategies to build psychological resilience before a crisis occurs.

## ARTICLE HISTORY

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## KEYWORDS

Physiotherapy; COVID-19; pandemic; views

## Introduction

In December 2019, the COVID-19 virus was reported in Wuhan, Hubei province, China. The infection spread rapidly, affecting every continent except Antarctica [1]. As of March 2023, the total number of cases globally was over 676 million with 6.9 million deaths recorded [2].

During a pandemic, healthcare workers are exposed to psychological stressors such as elevated risk of infection, inadequate protection, and isolation, which could lead to severe mental health outcomes such as post-traumatic stress disorder and depression in the long-term [3, 4].

Hospital administrators and policy makers want to effectively respond to the challenges that healthcare workers face and insight from healthcare workers is key to forming effective interventions [5]. Physiotherapists played an essential role in acute and recovery settings during the COVID-19

pandemic [6]. Therefore, health managers need to plan for a continued supply of physiotherapy services, particularly during a crisis such as a pandemic. The views of physiotherapists based on their experiences to date will be essential in designing effective policies and practices.

Reviews to date have focused on the views of healthcare professionals more broadly who worked during the COVID-19 pandemic [7, 8]. However, no reviews have been identified which focused specifically on the views of physiotherapists. This is not to disregard perceptions from the wider context of healthcare professionals, but rather to understand whether there is a nuanced perspective of physiotherapists regarding their experiences during the COVID-19 pandemic. The research question being addressed in this review was: what can be learned from the views and experiences of physiotherapists who worked with COVID-19 patients during the COVID-19 pandemic? This knowledge is important

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in understanding how physiotherapists and physiotherapy services might be better prepared in the event of a future pandemic.

## Methods

### Search strategy

This qualitative literature review took a systematic approach. A systematic search was conducted across four electronic bibliographic databases (CINAHL, MEDLINE, PsycINFO and SPORTDISCUS). Using a Boolean search strategy, key terms and their alternatives were entered into the databases (Table 1). Date limits of 2019 to 10 October 2022 were applied to ensure studies were relevant to the COVID-19 pandemic. Reference lists of eligible studies were hand searched. The search was limited to peer-reviewed papers published in English.

### Eligibility criteria and study selection

Since the aim of the review was to examine the experiences of physiotherapists who had worked directly with patients with COVID-19 during the COVID-19 pandemic, the authors sought to include both qualitative studies and mixed-methods studies with a substantive qualitative component. Inclusion/exclusion criteria are listed in Table 2. Papers were initially screened for eligibility by the first author using their title and abstract. Where it was difficult to determine if a paper met the inclusion criteria based on title and abstract, they underwent full-text screening. Discrepancies regarding eligibility for inclusion at the full-text screen stage were resolved by discussion and consensus with the second author. Included studies were critically appraised for quality using the Critical Appraisal Skills Programme checklist [9]. By reporting on the methodological quality of included papers, readers are able to make an informed judgment about the trustworthiness of the findings, and transferability of the research to other settings [10].

### Data extraction and synthesis

Data extraction was performed by the first author using a customised data extraction form. This included information regarding aims, study design, participant characteristics and the identified themes.

Data were analysed using Thematic Synthesis [11]. The findings section of each study was copied verbatim and pasted into a Microsoft Word document. Qualitative data were extracted from mixed methods studies. Only the data from physiotherapists who had direct contact with patients with COVID-19 were extracted. The findings section of each study were coded line-by-line in the first phase of open coding by the first author. The second stage of thematic synthesis involved organising these codes into related areas to develop descriptive themes which were cross-checked with the second author. Finally, the third stage involved generating analytical themes which went beyond the primary study data and generated interpretive constructs in relation to the research question [11]. The process of cross-checking themes between the authors led to valuable discussions which were important in the refinement and interpretation of final themes.

## Results

### Identification of studies

Overall, 631 studies were identified through the search strategy. Six studies met the inclusion criteria. Figure 1 shows how studies were selected using a flow chart from the Preferred Reporting Items for Systematic reviews and Meta-Analyses [12].

### Study characteristics

Study sample sizes ranged from eight to 171 participants. The average age of participants was 40 years [13–18]. All studies included both male and female participants.

Three studies took place in Spain, where data were collected from the same participants but using different perspectives including: the experiences and

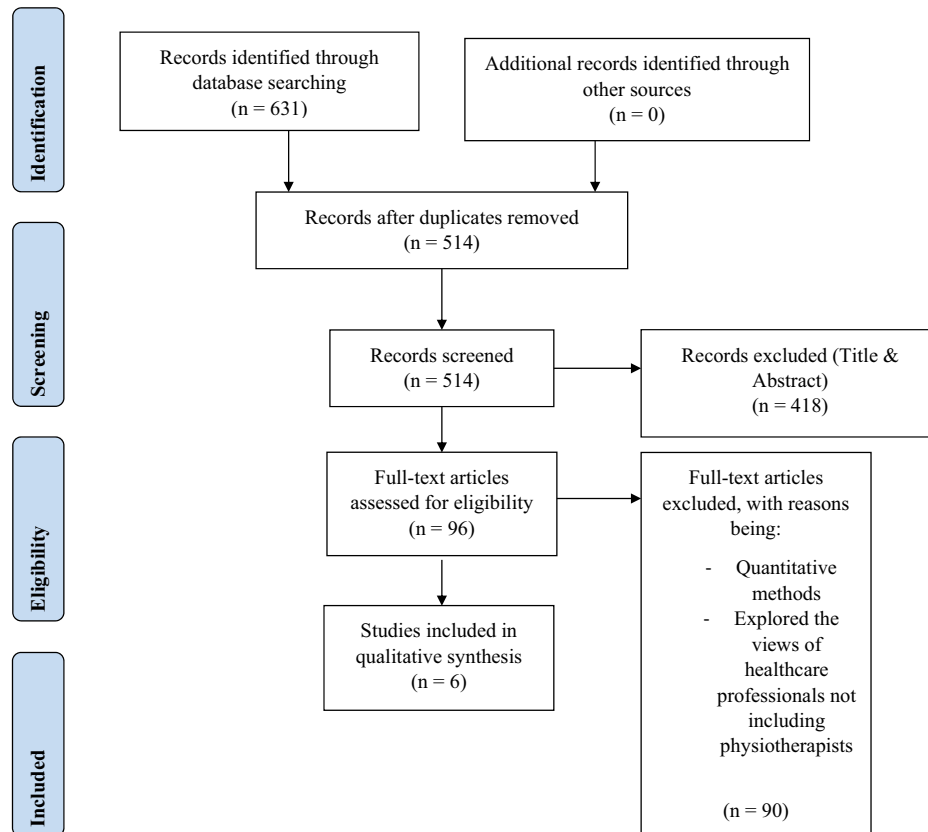
**Table 1.** Search terms.

Search term 1	Physiotherap* or "physical therap*" or "healthcare professional*" or "healthcare worker**"	TI Title
Search term 2	"COVID –19" or coronavirus* or "2019-ncov" or "sars-cov-2" or "cov-19" or pandemic or lockdown*	
Search term 3	qualitative or view* or experience* or interview* or perspective* or opinion* or attitude*	TI Title

\*Characters used in truncation.

**Table 2.** Inclusion and exclusion criteria.

Inclusion	Exclusion
<ul style="list-style-type: none"> <li>Physiotherapists who worked clinically with COVID-19 patients during the COVID-19 pandemic</li> <li>Primary research with a qualitative or mixed-methods (where the qualitative data can be extracted) study design</li> <li>English language studies published in a peer-reviewed journal</li> </ul>	<ul style="list-style-type: none"> <li>Healthcare professionals not including Physiotherapists</li> <li>Quantitative methods</li> <li>If it is not possible to distinguish the views of the physiotherapists from the views of other healthcare professionals</li> <li>Grey literature and systematic reviews</li> </ul>



**Figure 1.** Flow chart of study selection.

631 records were identified through database and hand searching; 418 were excluded at the title and abstract screening stage; 96 articles were assessed at the full text stage - 90 of these were excluded as they were quantitative study methods, or explored the views of healthcare professionals not including physiotherapists. This left 6 articles which met the inclusion criteria and were included in the review.

perspectives of physiotherapists working on the frontline; their emotional experience and feelings; the future challenges in the profession due to the COVID-19 outbreak [13–15]. One study took place in South Africa [17], one in Nigeria [18] and one in United Kingdom [16].

Data collection methods included semi-structured interviews [13–15, 18], open ended qualitative questions [17] and recorded stories on an anonymous website (16). Data were collected between March 2020 and January 2021.

### Quality appraisal

The quality of the included studies was assessed using the Critical Appraisal Skills Programme qualitative checklist [9] (Table 3). The main weakness across three of the studies was the lack of reporting of the relationship between the participants and researcher [16–18]. Reporting this relationship is important in qualitative studies because the dynamic between the researcher and participants has an influence on the study outcome as there may have been presumptions that would affect the analysis and interpretation of the data [19]. To avoid misrepresentations, researchers must take a reflexive approach [20]. However, in the remaining three studies, the

researcher participant relationship had been considered, demonstrating a reflexive approach.

### Qualitative synthesis

Four themes were identified as common experiences reported by physiotherapists following thematic synthesis: lack of support; emotional impact; coping strategies and integration; and value within the multidisciplinary team. These themes will be presented with direct quotes taken from the participants of the included studies (Table 4).

### Lack of support

This theme highlights the views of participants regarding the lack of support in the form of limited resources and information, inequality, and social acceptance. The arrival of the pandemic was abrupt, hospitals were unprepared and overwhelmed [15]. Participants worked in highly demanding conditions [13], while facing resource shortages. They reported a lack of PPE (Personal Protective Equipment) [13, 15, 18] and ventilators [13]: ‘We have had to save on PPE, there were not enough for all professionals’ [15]. Participants describe reusing single use PPE by wearing it the entire working day. Additionally,

**Table 3.** Characteristics of included studies.

Study	Aims	Design	Participants	Themes identified by the study authors
Bennet et al. 2020	Gain insight into the experiences and concerns of front-line National Health Service (NHS) workers while caring for patients during COVID-19	A qualitative study using an anonymous website where front-line NHS workers recorded their experiences of care of patients with COVID-19.	Participants: 54 front-line healthcare workers; 27 were doctors, 13 were nurses, 2 physiotherapists, 1 radiographer, 1 healthcare assistant and 10 'other' including managers running services for COVID-19 patients Age: Average age was 43.3 years Gender: 16 were male, 34 female and 4 reported themselves as 'other' or non-binary. Setting: Community of NHS workers who accessed Twitter	<ul style="list-style-type: none"> <li>• Trauma experience</li> <li>• Hierarchy of power &amp; inequality</li> <li>• The shock of the virus</li> <li>• Staff sacrifice &amp; dedication</li> <li>• Collateral damage</li> </ul>
Hassem et al. 2021	The aim of this study was to determine levels of mental and physical health, burnout, depression, anxiety and resilience and coping strategies used by a sample of South African physiotherapists with and without exposure to patients with COVID-19. Lived work experience, perceived health and sources of support were also explored	A mixed method design was used, comprising of an online survey and six open-ended questions	Participants: 74 participants Age: Average age was 37.25 years Gender: 2 males and 71 females Setting: All participants worked in South Africa	<ul style="list-style-type: none"> <li>• Experiences and challenges at work</li> <li>• Self-reported health and sources of support</li> </ul>
Igwesi-Chidobe et al. 2022	Aim to explore the experiences of front-line physiotherapists managing patients with COVID-19 in Nigeria	Qualitative in-depth semi-structured telephone interviews of physiotherapists managing patients with COVID-19 in the front line in Nigeria.	Participants: 8 participants Age: Average age was 37.5 Gender: 7 males and 1 female Setting: ICU and hospital COVID-19 wards, COVID-isolation, and treatment centres in Nigeria, between August 2020 and January 2021.	<p>Becoming and remaining part of the COVID-19 team or finally exiting the team</p> <ul style="list-style-type: none"> <li>• Problems with multidisciplinary teamwork</li> <li>• Broad ranging impact on physiotherapists personal and professional lives</li> <li>• Lack of support for perceived physiotherapy roles from prevention through to rehabilitation</li> <li>• Work organisation during the COVID-19 pandemic</li> <li>• The role of the Physiotherapist on Intensive Care Units</li> <li>• Patient Management</li> <li>• Challenges and Future expectations of Physical Therapy</li> </ul>
Palacios-Ceña et al. 2021	Explored the perspectives of Spanish physical therapists regarding: The organization of their work during the first wave of the pandemic; Their role within the intensive care units (ICUs); management of COVID-19 survivors; Potential future challenges identified for the physical therapy profession.	Qualitative design using in-depth semi-structured interviews. Researcher field notes were kept during the interview.	Participants: 30 Physiotherapists. Age: Average age was 41 ± 6 years. Gender: 11 males and 19 females Setting: National Public Hospital in Madrid during the first wave of the COVID-9 pandemic All Participants worked on the frontline. Direct contact with COVID-19 patients).	<ul style="list-style-type: none"> <li>• Work organisation during the COVID-19 pandemic</li> <li>• The role of the Physiotherapist on Intensive Care Units</li> <li>• Patient Management</li> <li>• Challenges and Future expectations of Physical Therapy</li> </ul>
Palacios-Ceña et al. 2021	Describe and explore the experiences and perspectives of physiotherapists working in public hospitals in Madrid, Spain during the COVID-19 pandemic	A qualitative exploratory study using in-depth interviews and researcher field notes.	Participants: 30 Physiotherapists. Age: Average age was 41 ± 6 years. Gender: 11 males and 19 females Setting: Rehabilitation services at public hospitals in Madrid during the COVID-19 pandemic	<ul style="list-style-type: none"> <li>• Call of duty</li> <li>• Working in war time</li> <li>• When I arrive at home</li> </ul>
Palacios-Ceña et al. 2021	Describes the emotional experiences and feelings of physiotherapists working at eleven public health hospitals in Madrid (Spain) during the first COVID-19 outbreak.	A qualitative exploratory study using semi-structured in-depth interviews and researcher field notes.	Participants: 30 Physiotherapists. Age: Average age was 41 ± 6 years. Gender: 11 males and 19 females Setting: Rehabilitation services at public hospitals in Madrid during the COVID-19 pandemic	<ul style="list-style-type: none"> <li>• Critical events</li> <li>• Emotional Roller Coaster</li> <li>• Last words</li> </ul>

**Table 4.** Quality of included studies based on CASP checklist [9].

	Palacios-Ceña et al. 2021	Palacios-Ceña et al. 2021	Palacios-Ceña et al. 2021	Bennet et al. 2020	Hassem et al. 2021	Igwesi-Chidobe et al. 2022
Was there a clear statement of the aims of the research?	Yes	Yes	Yes	Yes	Yes	Yes
Is a qualitative methodology appropriate?	Yes	Yes	Yes	Yes	Yes	Yes
Was the research design appropriate to address the aims of the research?	Yes	Yes	Yes	Yes	Yes	Yes
Was the recruitment strategy appropriate to the aims of the study?	Yes	Yes	Yes	Yes	Yes	Yes
Was the data collected in a way that addressed the research issue?	Yes	Yes	Yes	Yes	Yes	Yes
Has the relationship between researcher and participants been adequately considered?	Yes	Yes	Yes	Unsure	Unsure	Unsure
Have ethical issues been taken into consideration?	Yes	Yes	Yes	Yes	Yes	Yes
Was the data analysis sufficiently rigorous?	Yes	Yes	Yes	Yes	Yes	Yes
Is there a clear statement of findings?	Yes	Yes	Yes	Yes	Yes	Yes
How valuable is the research?	Yes	Yes	Yes	Yes	Yes	Yes

once the participants donned the PPE, they could not remove it [15]: *'If you wear the PPE, you cannot remove it either for going to the bathroom, you have to pee with it'* [15]. Furthermore, participants resorted to handmaking their own PPE out of non-approved plastic [15].

For those in Nigerian Government hospitals, support was unequally distributed [18]. For example, participants described unequal payments and accommodation between physiotherapists and doctors [18]: *'The doctors are paid, and the physiotherapists are not paid'* [18]. They also felt they were treated less favourably by other health professionals as attempts were made to remove physiotherapists from COVID-19 teams by the government taskforce [18]. This led to a sense of feeling unsupported.

### Emotional impact

This theme identifies the emotions participants experienced while working during the pandemic. The overarching emotion was fear [13, 15, 17, 18]. Fear was described as *'paralysing'* and came from the risk of exposure, getting infected, dying [18], and spreading the virus to home [13]. Participants describe returning home with fear [13, 15], where attempting to maintain normality caused anxiety [15]: *'You take fear home with you'* [13]. Although fear did not stop them from working, it remained as a *'reminder and warning'* [13].

Many experienced daily contacts with death [13], and felt the loss of their patients [18]. Some felt conflicted treating patients knowing they will die [13], and dreaded the possibility of losing them [18]: *'nobody wants a patient to die in his hands'* [18].

Participants recall traumatic memories that will remain in their minds [13, 16]: *'I think about it all the time. I think about all those people that died in the beginning alone'* [16]. The physical and psychological brutality of the virus left participants *'shocked'* [16]. Some participants held the belief that

many will face psychological problems in the future [13].

### Coping strategies

This theme portrays the strategies used by participants to help cope with the challenge of working during the COVID-19 pandemic. Participants reported a lack of professional psychological help available for healthcare workers prior to the COVID-19 outbreak [13]. They felt those who had not lived the same experience would not understand [13] with many utilising colleagues as a source of support [13, 15, 17, 18]: *'I prefer not to talk to anyone; people would not understand. You must have lived it'* [13]. However, others focussed on the rewarding nature of their work in terms of patient gratitude and joy from helping others [13, 18]: *'He tells me "Thank you for saving my life"'* [18].

Participants felt they had a duty, helping in any way they could [15] and those with a respiratory background were motivated by their skills and confidence [18]: *'Because my area of specialisation is cardio-respiratory... it's like, a calling to me'* [18].

### Integration and value within the multidisciplinary team

This theme describes the views of participants on their perceived acceptance, integration, and growth within the multidisciplinary team (MDT). Participants described transitioning from feeling separate and out of place, to becoming more integrated within healthcare professional teams [14]. They felt accepted and recognised by others, formed a strong team spirit and camaraderie [13, 18]: *'On one hand it was a real tragedy, on the other, it was enriching, because I was immersed in an interdisciplinary team with other professionals, working together'* [13]. Healthcare professionals worked together with the disappearance of divisions and hierarchy [13, 14].



Physiotherapists report great professionalism [15], constant communication and shared decision making [14].

Conversely, some faced discrimination within the MDT [18]: *'They did not provide us accommodation like the doctors and.... we treated like foreigners, because everybody started avoiding us'* [18]. Initially, physiotherapists were not invited to join COVID-19 teams and they reported that doctors viewed them as unimportant and inferior, which left physiotherapists feeling underappreciated [18]: *'I was angry because I got it because I volunteered. In the western world, when volunteers go to an active environment, they are well protected. Coming into an environment where you are not even acknowledged'* [18].

Participants describe exposure to different work environments [13], and acquiring new responsibilities [17]. Awareness of the physiotherapist's role increased as they demonstrated their capabilities [14, 18]. They report expanding their comfort zones and growing as professionals, allowing physiotherapy to advance as a science [13]: *'I have changed as a person. I have learned as a professional'* [13].

## Discussion

The aim of this review was to examine the views and experiences of physiotherapists who worked during the COVID-19 pandemic. This was important in understanding whether there is a nuanced perspective of physiotherapists regarding their specific experiences. Findings from this review highlight that there is an overlap in the views expressed by physiotherapists which have similarly been reported in the wider healthcare literature on the experiences of working during a pandemic [7, 8]. This review seeks to add to this body of knowledge by supporting these wider findings and highlighting any nuanced differences.

The first contribution this review makes regarding the views of physiotherapists who worked during the COVID-19 pandemic is to understand the challenge around resource shortages, specifically the lack of PPE. In this review, participants reported that there was not enough PPE for all professionals and described reusing single use PPE and making their own out of non-approved plastic. Similarly, a lack of PPE has also been reported from healthcare professionals in wider literature, which exacerbated fear [7, 8]. These results are substantiated by the World Health Organisation who reported shortages of PPE occurred globally and warned that demand increase and shortage of supply of PPE put lives of healthcare workers at risk [21]. Understandably, the lack of adequate PPE has been found to increase fear of infection, leading to increased anxiety in

healthcare workers [22]. Employers have a duty to provide workers with the necessary equipment, including PPE to do their job [23]. This lowers perception of risk, leading to lower adverse psychological outcomes, and trust between workers and organisations [3]. As would be expected, PPE is vital to limit the duration and impact for everyone in the case of a future pandemic [24]. This suggests that strengthening and expanding supply chains which prioritise fast distribution of PPE at the start of a pandemic would have far reaching benefits.

The second contribution this review makes is in identifying the emotions physiotherapists experienced while working during the COVID-19 pandemic, and the possible long-term implications. During a pandemic, healthcare workers are exposed to psychological stressors that could lead to severe mental health outcomes [3]. Not surprisingly, given the situations to which healthcare workers were exposed during the pandemic, the participants in this review reported fear of becoming infected, spreading the virus to home, and fear of dying. Comparably, healthcare professionals who worked on the frontline reported similar emotional challenges in wider literature [7, 8]. During a crisis, the response to emergencies tends to focus on protecting people from the immediate threat [25]. However, healthcare professionals are at an increased risk of developing longer term mental health conditions such as post-traumatic stress disorder and anxiety, after a pandemic [3, 26]. Stress, anxiety, and other psychiatric illnesses are the most reported reasons for sickness absences within the National Health Service in the United Kingdom [27]. Elevated levels of sickness absence heighten the risk to patient quality of care, undermining organisational performance [28]. This can be combatted by reducing the psychological burden of individual healthcare workers, which then strengthens the response capacity of healthcare systems [3].

It is worth noting that not all individuals experience long-term negative effects after a traumatic event [29]. Thus, not all physiotherapists working in pandemic conditions will be negatively impacted in the long-term. However, public health systems have a vital role in providing sustained psychological support and long-term monitoring [30]. For future preparation, rather than waiting until a crisis has occurred, organisations should focus on promoting psychological resilience beforehand through introducing the concept of resilience in training programmes for staff. This would provide healthcare workers with the opportunity to reflect and learn from peers, and experienced healthcare professionals sharing learning through mentoring [31].

Thirdly, from the participants perspective, a common coping strategy during the pandemic was to rely on colleagues as a source of support. This has also been reported by healthcare professionals in wider literature who felt their usual support systems could not relate to their own experiences [7]. Social support from peers who have a greater understanding of the event prevents feelings of detachment and loneliness [32]. Participants in this review reported preferring not to speak to those who did not have lived experience or working clinically during the pandemic as it was felt they would not understand [13]. However, it is unclear from these results if the participants preferred speaking to a counsellor or a colleague who had lived experience. Since relationships are central to wellbeing [33], understanding the most appropriate people to provide relational support would warrant further investigation.

Importantly, strong social support networks have been shown to lower degrees of stress, and heighten self-efficacy, which is known to help health care workers cope in high-risk work [34]. However, there is a lack of evidence regarding how to maximize the effectiveness of peer support and there is little guidance available on the duration, frequency, or intensity of support required [35]. Consequently, peer support value should be recognised in addition to professional mental health support but should not be a replacement [36].

Participants in this review reported no available professional psychological help prior to the COVID-19 outbreak [13]. It is unclear which coping strategy participants in this review would have prioritised, had professional psychological help been readily available. In China, healthcare workers prioritized rest and sufficient PPE over formal psychological help in the early outbreak of COVID-19 [37]. These findings should be taken into consideration when developing strategies to cope in the event of a future pandemic. More research is needed to help match staff to a range of support options, for example, online courses, peer groups, and one-to-one support.

Finally, this review examined the perceived acceptance of physiotherapists into multi-disciplinary teams (MDT) working during the COVID-19 pandemic. While physiotherapists from Spain felt recognised and accepted within the MDT [14, 18], the physiotherapists working in MDTs in Nigeria felt discriminated against and under-appreciated [18]. These contrasting results could be explained by the low levels of awareness and understanding of rehabilitation professions within low-income countries such as Nigeria [38]. The value of the disparity in the results from this review are that they highlight the predicament of physiotherapists in low-income countries where the lack of professional recognition is a barrier

to the development of professional practice [39]. Although healthcare professionals in wider literature have reported inequalities in pay and conditions [7, 8], the value of their role within COVID-19 teams were not questioned to the same extent as the physiotherapists' in Nigeria. Nigerian physiotherapists were initially not invited to join COVID-19 teams [18]. This evidence of physiotherapists facing exclusion, more so than other professions, highlight the nuances present in the experiences of individual healthcare professions. Not raising awareness could lead to qualified physiotherapists emigrating to other countries and difficulty attracting students into physiotherapy programmes [39]. The importance of the results is understanding how this could be used for the development of physiotherapists role in MDTs in future pandemics. To prepare for future pandemics, advocacy from international organisations that target policy makers and healthcare professionals is crucial for raising awareness of the contributions physiotherapists can make [39].

### **Strengths and limitations**

The strength of this review is that it contains detailed experiences of participants, providing depth into the insight of physiotherapists who worked during the COVID-19 pandemic. It included studies which took place in both high-income countries and low-income countries, improving the transferability of the findings.

Limitations of the review include the limited number of studies available which specifically focus on the views of physiotherapist during the COVID-19 pandemic. In addition, three of the studies included are based on one larger study with the same participants, reducing the population of participants and therefore the transferability of the results. This review was limited to studies published in English language due to pragmatic reasons of resourcing which may have led to the exclusion of some relevant studies.

### **Conclusion**

This review provides an understanding of the views and experiences of the participants who worked during the COVID-19 pandemic. Although the studies were undertaken in countries with different standards of health care, common themes emerged. Based on the findings of this study the following recommendations are made to help physiotherapists prepare for future pandemics. Firstly, potential resource shortages should be addressed by strengthening supply chains to ensure timely distribution of PPE at the start of a pandemic. Secondly, this study



recommends strengthening psychological resilience by promoting a range of psychological support strategies such as online courses, peer groups, and one-to-one support. Thirdly, the value of peer and social support as a coping strategy should be recognised in addition to professional mental health support. The final recommendation is to advocate for the profession of physiotherapy in low-income countries. This would lend towards overcoming lack of professional recognition, reduce the risk of qualified physiotherapists emigrating to other countries, and attract students into physiotherapy programs leading to growth of the profession. These recommendations could help healthcare organisations and policy makers implement appropriate measures to meet the needs of physiotherapists in the event of a future pandemic.

Future research should focus on identifying which support options are most effective in developing strategies to cope in the event of a future pandemic. This should include research into promoting psychological resilience before a crisis occurs. Additionally, resilience can be built into pre-registration physiotherapy training through discussions, role play and practical exercises containing the concept of resilience [40].

## Disclosure statement

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