

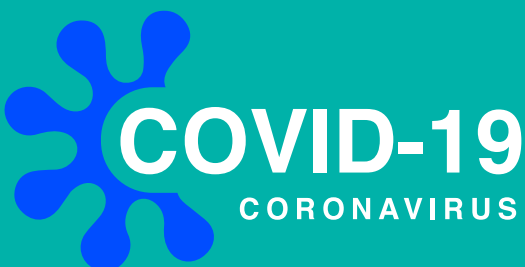


**World
Physiotherapy**

**World Physiotherapy
response to COVID-19**

Briefing paper 5

**THE IMPACT OF COVID-19 ON FRAGILE HEALTH
SYSTEMS AND VULNERABLE COMMUNITIES,
AND THE ROLE OF PHYSIOTHERAPISTS IN THE
DELIVERY OF REHABILITATION**



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World Physiotherapy briefing papers

World Physiotherapy briefing papers inform our member organisations and others about key issues that affect the physiotherapy profession.

World Physiotherapy is producing a series of papers in response to COVID-19.

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Tracy Bury, Linzette Morris, Cornelia A Barth, Lucia Maddalena Bernhard, Jacqueline Drouin, Laura Finucane, Hans Hobbelen, Anri Human, Brenda O'Neill, Claire O'Reilly, Michel Probst, Peter Skelton, Gaëlle Smith, Violette van Bever, Karin Wadell, and Sheree York.

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➤ Introduction

This briefing paper considers the impact of COVID-19 on fragile health systems and vulnerable communities, and the role of physiotherapists in the delivery of rehabilitation in these settings.

Whilst many fragile systems and vulnerable communities are located in low and middle income countries (LMICs), they can exist in all countries.

The paper will focus on:

- the change in delivery of rehabilitation and access to physiotherapy during the COVID-19 pandemic
- the impact of decreased physiotherapy rehabilitation services during the pandemic on vulnerable communities
- potential changes required in human resources and workforce planning to meet the needs post COVID-19 for physiotherapy service delivery and rehabilitation
- the importance of longer term investment in physiotherapy and rehabilitation post COVID-19 that needs acknowledging and planning at this stage

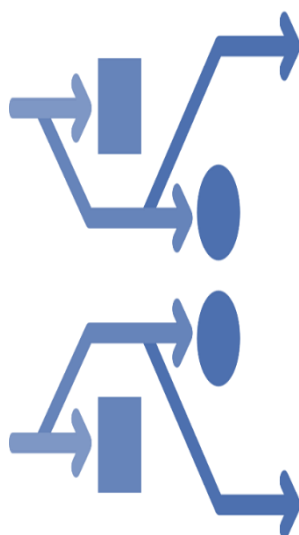
➤ Key messages

Fragile systems and vulnerable groups

FRAGILE

- The COVID-19 pandemic has further highlighted the inequalities that exist between the rich and poor and the consequent impact for those in fragile systems and vulnerable communities.
- Rehabilitation continues to be wrongly perceived as a non-essential health service for most patients when for many patients it is essential.

COVID-19 and the impact on rehabilitation service delivery



- Disruption to routine physiotherapy and rehabilitation services will have longer term consequences that need to be assessed, and plans should be developed with appropriate investment in service provision and personnel to maximise functional recovery.
- Physiotherapy and rehabilitation service provision in LMICs was already behind and at a disadvantage prior to COVID-19 and this has been further exacerbated.
- An investment in rehabilitation for individuals with specific needs is an investment in economic recovery.
- Long term health consequences from COVID-19 are still emerging and are likely to further highlight the need for long term rehabilitation.
- National lobbying by professional and patient advocacy groups will be important to present the case for long term investment in rehabilitation.
- Whilst digital health solutions and telehealth provision have been offered in many areas of practice and service delivery, they do not suit all and are inaccessible for many disadvantaged by the digital divide.

Disruption of physiotherapy rehabilitation for those with non-communicable diseases (NCDs)



- Consistent with the recommendation from the World Health Organization (WHO), when rehabilitation services are temporarily stopped, decreased or diverted, clear guidance is needed to identify priority patients who should continue rehabilitation in the first instance and then restart priorities for others.
- Alternative strategies are required to meet ongoing rehabilitation needs where primary provision has been disrupted and service planning needs to prepare for the resumption of services as soon as it is safe to do so. Telehealth options may be a viable solution, dependent on appropriate infrastructure and resources, but should not be considered the norm longer term.

Vulnerable groups living in fragile systems and humanitarian crises



- The pandemic is further exacerbating humanitarian crises in fragile systems, increasing the impact and consequences for those living with disabilities and in need of physiotherapy and rehabilitation.

Children



- While healthy children seem to recover from COVID-19 with little problems, premature infants and those children with cardiopulmonary, neurologic and autoimmune conditions and those receiving chemotherapy are most vulnerable to complications and the lasting effects of the virus. These children should have access to physiotherapy and rehabilitation as required.
- Many children with disabilities will have faced disruption to their physiotherapy and rehabilitation services during the pandemic. This may have contributed to a further decline in function, placing a further need on already fragile under-funded services.

Women



- Service disruption and delay to routine women's health physiotherapy and rehabilitation services risks further longer-term disability. This is especially so in LMICs.
- A rise in domestic violence has placed more women at risk of both physical and mental health issues leading to longer term disability, without timely access to appropriate physiotherapy when required.
- Rehabilitation needs in LMICs are higher in women compared to men, but access difficulties often lead to lower service attendance of women and girls and a negative impact on realising potential. This is likely to be worse during the COVID-19 pandemic.

Older adults



- Older people are at greater risk when contracting COVID-19 as its impact is more severe.
- The consequences from COVID-19 risk management strategies, including social distancing and isolation, can impact older people both physically and mentally more significantly.
- Deconditioning and sarcopenia are serious concerns for older people as a result of inactivity, and this may be coupled with a loss of confidence in returning to normal activities. They need appropriate support to regain and improve physical conditioning from physiotherapists, which will also boost confidence.

People with existing conditions



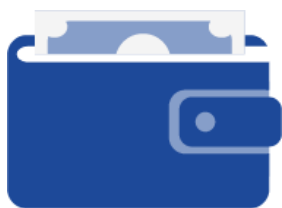
- The existence of conditions places individuals at greater risk from COVID-19. Disruption of rehabilitation services for these individuals needs to be addressed to prevent a further decline in functional ability.

People with disabilities



- Further work on disability inclusion, and access to timely physiotherapy and rehabilitation, is more important than ever to ensure people are not left in need. The opportunity to work across sectors, not just health, to build back integrated service provision should be harnessed.
- Physiotherapy services for those with disabilities have been significantly disrupted. Strategies are required to support the reinstatement of them, as well as investment matched to the long term needs of patients.
- Advocacy efforts focusing on prioritising investment in rehabilitation for longer term economic and societal benefit will be important for all patients and especially those living in LMICs.

Individuals in the lower income to no income brackets



- Individuals with lower income to no income are already disadvantaged and access to physiotherapy and rehabilitation is further compromised at this time.
- The physiotherapy profession, working with others, will need to be proactive in restoring and advancing rehabilitation services.

Refugees and migrant populations



- Refugee and migrant populations are one of the most vulnerable in society and this vulnerability is further heightened during the COVID-19 pandemic.
- As an under-served population physiotherapy and rehabilitation service provision is already limited, placing this population at further risk of long term disability without an appropriate infrastructure to provide services.
- National health strategies should include plans for appropriate rehabilitation assessment and provision.

Potential changes in human resources and workforce planning after COVID-19



- The lack of investment in the past in physiotherapy and rehabilitation services will be further exacerbated by the consequences of COVID-19 and needs urgent attention to build long term sustainable solutions.
- Governments need to understand that an investment in rehabilitation, as an essential service, makes economic sense. Physiotherapists have a vital role to play in advocating for change and appropriate investment.
- Increased demand for rehabilitation as countries move beyond the immediate pressures of the COVID-19 pandemic is inevitable. Workforce planning needs to assess and address the capacity of the education system and practice settings to meet the current priorities for service provision and future needs.
- The alarming shortage of professional education programmes for rehabilitation workers, including physiotherapists, in LMICs risks remaining unresolved in light of the financial pressure on health and education systems. Sustainable solutions for addressing workforce shortages are required.
- Physiotherapy and rehabilitation provision in many LMIC settings relies on significant support from NGOs and volunteer organisations. With travel restrictions and many staff returning to home countries already limited provision has been further compromised.

➤ Context

World Physiotherapy is made up of 122 member organisations from five regions and from low, middle and high resource countries. Hence, there is great diversity in the delivery of physiotherapy and rehabilitation services in the countries/territories of its member organisations.

We note that there are a variety of contexts in which practice takes place as well as a diversity of health care delivery systems in which physiotherapy is practised globally. Moreover, the trajectory and impact of the COVID-19 pandemic over time means that as the epicentre of it moves, societies and communities will be affected in different ways and at different times.

World Physiotherapy is in close contact with its member organisations across all settings and has been collating the resources generated nationally and the publications emerging via its [COVID-19 knowledge hub](#). We will continue to provide links to resources to inform practice, drawing on resources from within the profession and other global organisations.

Across the globe, the COVID-19 pandemic has overwhelmed healthcare systems in an unprecedented manner (Falvey et al., 2020). The priority of every country affected has been to re-direct the health care focus to the needs of those acutely affected, to reduce further infection and to maintain social distancing between people. The role of physiotherapists has been highlighted for the acute setting management of COVID-19 (Thomas et al., 2020) and a range of associated rehabilitation needs have been highlighted (World Physiotherapy, 2020). Many physiotherapy rehabilitation services in communities, for individuals with conditions unrelated to COVID-19, were suspended or reduced during national lockdowns. In some places this continues and in others there is a slow return to service provision with an acknowledgment that the demand is now greater than before, due to this service disruption. Those that require ongoing rehabilitation to maintain optimal function and quality of life, in many areas, have had to be neglected due to risk mitigation requirements, service reprioritisation and staff redeployment resulting from priority and funding decisions made nationally and locally.

A few of the key messages from World Physiotherapy's first rehabilitation briefing paper are worth restating here (World Physiotherapy, 2020):

- Physiotherapists are vital for rehabilitation as patients transition from the acute to the post-acute phase following COVID-19 infection.
- Service delivery pathways need to support the transition from the acute to the post-acute phase across settings and a multi-professional, cross-sectorial approach can support this.
- Rehabilitation for those living with a disability and for frail older people should continue during times of a pandemic, albeit in appropriately modified forms of delivery.
- Those responsible for economic planning and health service delivery, in the face of the pandemic, are urged not to compromise the rehabilitation needs of those with disabilities.
- Absence of physiotherapy rehabilitation provision will have long term consequences leading to increased need and potentially increased disability.
- Telehealth is a viable and effective form of service delivery for many physiotherapy interactions at a time of social distancing, but not all.
- There will be increased demand for rehabilitation professionals working in acute and critical care settings, and action is needed to ensure staffing requirements are met.

FRAGILE Fragile systems and vulnerable groups

Fragile systems focus beyond fragile states (countries, territories) to look at broader contexts and the interplay between barriers, outcomes and health advances. From a global health perspective “fragility increasingly refers to breakdowns at the interface between the community and the health system” (Diaconu et al., 2019).

Countries with the most fragile systems and vulnerable communities will probably suffer more during and after COVID-19. This is because in these countries, where resources are already scarce and budgets are restricted, the COVID-19 pandemic has deepened the divide between the rich and the poor, and has highlighted the inherent inequalities even further.

The following groups are generally classified as **vulnerable groups**: children, women, older adults, people with pre-existing co-morbidities, people with disabilities, individuals in lower to no income brackets, and people living in conflict zones. A combination of vulnerability characteristics, for example an older woman with a disability, multiplies the difficulties faced in receiving essential services. During global health crises, the most vulnerable and poorest groups are reported to be typically affected the most (Abuelgasim et al., 2020, Rentsch et al., 2020).



COVID-19 and the impact on rehabilitation service delivery

Rehabilitation is ‘a set of interventions designed to reduce disability and optimize function in individuals with health conditions in interaction with their environment’ (World Health Organization, 2017). A health condition refers to disease (acute or chronic), disorder, injury or trauma; it may also include other circumstances, such as pregnancy, ageing, stress, congenital anomaly, or genetic predisposition (American Physical Therapy Association, 2014). This broad perspective on rehabilitation informs this paper.

Physiotherapy, as part of rehabilitation services, is an essential component of high-value care which can be offered to individuals across the lifespan to optimise physical and cognitive functioning to reduce disability (Falvey et al., 2020, Global Rehabilitation Alliance, 2020). Physiotherapy enables individuals to achieve their full functional potential, improve their quality of life, and ensure that they are able to contribute to society and the economy of their country (Falvey et al., 2020, World Physiotherapy, 2020).

Responding to COVID-19 has resulted in many obvious changes and raised a number of challenges, related to the delivery of physiotherapy and rehabilitation services, in communities across the globe. Prioritising acute services to deal with the pandemic has led to many other services being suspended and staff redeployed. The appropriateness of re-tasking and upskilling of non-specialist staff to new or expanding ICU settings, including the provision of respiratory physiotherapy services, is one that needs careful management and context specific solutions.

Essentially, many of those usually requiring rehabilitation during this time have had to wait, and the change in priority of services within health systems has potentially resulted in the following (World Physiotherapy, 2020):

- elective surgeries being cancelled in the midst of COVID-19, resulting in many people who have become deconditioned while they wait for orthopaedic and other surgeries;

- individuals with acute musculoskeletal problems having limited access to physiotherapy services during the lockdown periods;
- individuals delaying presentation of symptoms due to concern about COVID-19;
- physiotherapy services in community, outpatient settings or private practices not being open with many being classified as non-essential;
- individuals unable to leave their homes for several weeks becoming more sedentary, losing mobility and function.

Of great concern is the impact of these changes on those living in LMICs and fragile health systems and the large number of vulnerable communities. In these settings, more so than high income ones, rehabilitation is not currently viewed in the same light as medical and curative services, thus its place in more fragile healthcare systems is poorly recognised, understood and under-funded, resulting in a limited stable infrastructure with insufficient capacity.

Although the actual impact of the suspension of rehabilitation services is not yet known, the long term effect of delays experienced in accessing and seeking physiotherapy services during lockdown, or in doing little physical activity, will most likely have significant effects on the overall mental and physical health of a person. The effects on those living in LMICs who do not receive rehabilitation will most likely have a greater impact and take longer to be addressed.

The digital divide is a particular challenge. Many may not have access to social media and technology channels being used for health promotion, disease prevention, tracing and communications, telehealth solutions and awareness campaigns (Petretto and Pili, 2020). Rehabilitation strategies therefore need to adapt and support these individuals and deliver services in appropriate ways, especially noting the needs of the disadvantaged and marginalised (Armitage and Nellums, 2020).

A further aspect of marginalisation is the potential risk of stigma around COVID-19 and accessing treatment, as well as the stigmatisation of individuals, in certain communities, that fall unwell with COVID-19, notably in LMICs (Risk Communication and Community Engagement Working Group on COVID-19, 2020). WHO's communications have tried to address these risks (World Health Organization, 2020c). This has implications for those needing access to rehabilitation who may not come forward themselves.

The role of rehabilitation to positively influence an individual's capabilities and capacity to contribute to society and therefore a country's economy, is poorly acknowledged (McDaid and Park, 2017). We do not yet know what the effect has been on those in the midst of return-to-work (RTW) rehabilitation. It can be assumed that the delay in receiving rehabilitation could ultimately have delayed RTW, which may result in individuals never returning to work, and who then become a burden to their families and society, as well as becoming one less contributor to the economy of a country. Where family members take on the role of the carer there is further loss of people dropping out of economic productivity. These consequences will affect LMICs the most.

'Long covid' is a term used to describe the lasting effects experienced by those recovered from COVID-19 or where the usual symptoms have lasted far longer than would normally be expected (Mahase, 2020). Post-acute COVID-19 defines the period extending beyond three weeks of onset of symptoms and chronic COVID-19 as extending beyond 12 weeks (Greenhalgh et al., 2020). It is thought that approximately 10% of people experience prolonged illness after COVID-19 (Greenhalgh et al., 2020). These people may be self-managing their symptoms in the community, but where they do present to primary care the need to refer to relevant rehabilitation services should be considered, along with appropriate advice on self-management strategies (Greenhalgh et al., 2020). The impact on those with existing morbidities and disabilities will need special consideration for physiotherapy.

Health systems need to prepare for a significant surge in disability, which will require more rehabilitation services. However, we also have to be prepared since most countries have been affected economically, healthcare funds typically earmarked for rehabilitation could well be prioritised elsewhere after COVID-19, leading to a downward spiral for those living with disability. These effects will be even more evident in LMICs where budgets were already restricted. Now more than ever, physiotherapists have to emphasise their value by highlighting the role rehabilitation plays in reducing overall disability and burdens on the economy of a country.



Disruption of physiotherapy rehabilitation for those with non-communicable diseases (NCDs)

The changing burden of disease together with advances in medical technology, has resulted in increased life expectancy with a concomitant increase in an ageing population (Habib and Saha, 2010, NCD Countdown 2030 collaborators, 2018). With the global increase in an ageing population, particularly in LMICs, there is an increased risk for diseases of lifestyle or non-communicable diseases (NCDs), including hypertension, cardiovascular disease, and respiratory conditions, as well as other conditions such as Alzheimer's disease, Parkinson's disease, and osteoarthritis. The alarming pace of increase in the prevalence of these conditions, and their associated complications, will continue to increase the demand for physiotherapy rehabilitation services.

The NCD Alliance has recently flagged concerns for those living with NCDs and highlighted these key messages (NCD Alliance, 2020):

- people living with NCDs are at a higher risk of severe complications and death from COVID-19
- people with compromised immune systems (e.g. due to cancer treatment, diabetes, COPD, steroid treatment) are at high risk of developing complications from COVID-19
- evidence indicates that COVID-19 and its treatments may also cause life-threatening or long-lasting impacts
- COVID-19 is disrupting the provision of essential public health functions and necessary health services, including for people living with NCDs

A recent WHO survey of 155 countries related to NCDs further reiterated this concern. The survey concluded that of all services, rehabilitation was the most commonly disrupted service wrongly perceived as non-essential for all patients (World Health Organization, 2020e).



Rehabilitation continues to be wrongly perceived as a non-essential health service for all patients when for many patients it is essential.

(World Health Organization, 2020e)

According to the survey, rehabilitation services had been disrupted in almost two-thirds (63%) of countries across the globe, even though "rehabilitation is key to a healthy recovery following severe illness from COVID-19" (World Health Organization, 2020e). Globally, two-thirds of countries reported that they had included NCD services in their national COVID-19 preparedness and response plans; 72% of high-income countries reported inclusion compared to 42% of low-income countries. Services

to address cardiovascular disease, cancer, diabetes and chronic respiratory disease were the most frequently included. Dental services, rehabilitation and tobacco cessation activities were not as widely included in response plans according to country reports (World Health Organization, 2020e).

In some countries, teams providing rehabilitation services essential to the functioning and wellbeing of persons with disabilities, older persons and others with specific health conditions, have reportedly been forced to discharge patients before completing their treatment. Without referrals to other programmes, such patients will face ongoing complications and risk long-term impairments. There is thus a need for a multisector response to support rehabilitation across sectors (United Nations, 2020a).

Encouraging findings from the WHO survey were, however, that alternative strategies have been established in most countries, to support the people at highest risk, to continue receiving treatment for NCDs. Among the countries reporting service disruptions, globally 58% of countries are now using telehealth (advice by telephone or online means) to replace in-person consultations; and in low-income countries this figure is 42% (World Health Organization, 2020b).

The use of telehealth by physiotherapists was highlighted in World Physiotherapy's first rehabilitation briefing paper and it is important that, where applicable and feasible, this is offered for people needing rehabilitation for NCD related problems (World Physiotherapy, 2020). However, for many countries, implementation of telerehabilitation is not possible or easy (Leochico, 2020). Other strategies for these settings is therefore vital to ensure the continuation of physiotherapy rehabilitation.



Vulnerable groups living in fragile systems and humanitarian crises

Vulnerable groups living in fragile systems and affected by humanitarian crises (box 1) are impacted differently by the COVID-19 outbreak.

Box 1 Defining fragile systems and humanitarian crisis settings

	<p>Fragile systems and humanitarian crisis settings refer to settings characterised by some or all of the following, regardless of the social, humanitarian, citizenship, migration and asylum status of its residents and where these settings are located:</p> <ol style="list-style-type: none">1. Overcrowding and inadequate dwellings or shelter/ insufficient settlement infrastructure2. Lack of availability of clean water and sanitation3. High dependence on informal economy and daily wages4. Poor access to health care and basic services5. Disrupted health system6. Prevalent food insecurity and malnutrition7. Armed conflict and violence8. Weak institutions/ challenged governance and lack of emergency response capacities9. Prevalence of highly marginalized and underserved communities <p>(OCHA Inter-Agency Standing Committee, 2020)</p>
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In these settings, critical measures for COVID-19 prevention and control that have been a feature of the response in higher resource settings, such as physical distancing, movement restrictions and home confinement, hand washing with water and soap, closure of schools and workplaces, may be more difficult to implement and some of them potentially harmful to the survival of many community members (OCHA Inter-Agency Standing Committee, 2020). In addition, capacities for testing, isolating and treating those who develop the disease, tracing and quarantining contacts may be severely lacking locally owing to weaker health systems (OCHA Inter-Agency Standing Committee, 2020).

According to Humanity and Inclusion, the COVID-19 crisis affects the most vulnerable communities by exacerbating the humanitarian crises, increasing isolation of people with disabilities, exacerbating existing health issues and making access to valuable reliable information more difficult (Favas, 2020, Humanity & Inclusion, 2020a, Humanity & Inclusion, 2020c, Sphere, 2020a, Sphere, 2020b). Access to rehabilitation, especially in deep rural and remote areas, is further impeded by the lack, and cost of, transport and environmental factors, such as difficult terrain or crime-ridden areas that need to be crossed (Grut et al., 2012).

These areas are usually under-served and World Physiotherapy's [country profiles](#) show the disparities in physiotherapist to population ratios. Not only will these settings be dealing with the aftermath of the COVID-19 pandemic on these communities, but they will also have to deal with the exacerbation of the humanitarian crises in these settings already compromised by limited infrastructure and physiotherapy rehabilitation capacity (Sphere, 2020a, Sphere, 2020b, World Health Organization, 2020d).



While some children and infants have been infected with COVID-19, most illnesses have been among adults (Centers for Disease Control and Prevention, 2020a, Centers for Disease Control and Prevention, 2020b). Some reports however suggest that infants under 1 year old and those with underlying medical conditions might be at higher risk of serious illness from COVID-19 than other children (Centers for Disease Control and Prevention, 2020b). Children with certain underlying medical conditions, such as chronic lung disease or moderate to severe asthma, serious heart conditions, or weak immune systems, might be at higher risk for severe illness from COVID-19. (Centers for Disease Control and Prevention, 2020b). While data is limited, there are reports that where children are more severely affected the issues are similar to other age groups (Saleem et al., 2020).

Children who require ongoing physiotherapy and rehabilitation for pre-existing conditions, or with new needs, may not present to hospitals or clinics during the pandemic. This may be due to parents being fearful of the exposure risks, real risks that lead to health advisories to self-isolate, or access restricted by governments. In instances where physiotherapy services are delivered in school settings, school closures have also meant a significant disruption to rehabilitation. This disruption is likely to have had a further impact on the whole family/carer arrangements and workload.

Of real concern is that in LMICs access is already restricted due to environmental and social challenges and that the pandemic will exacerbate these challenges, further delaying access to physiotherapy and rehabilitation. In turn, this could negatively impact their progress and put them at risk of deterioration and diminished function. It may be difficult to return to their baseline functional ability prior to the COVID-19 pandemic, before even continuing to move forward.



Women

Disability prevalence and thus rehabilitation needs in LMICs are higher in women compared to men, but access difficulties often lead to lower service attendance of women and girls. This is likely to be exacerbated during the COVID-19 pandemic, further reducing the potential of women and girls with disabilities with a long-lasting impact (Barth et al., 2020).

Physiotherapy led women's health services, such as antenatal classes, post-partum management, incontinence treatment, gynaecology surgery recovery, and post-mastectomy lymphedema management, will be significantly affected and delayed leading to potential disability due to COVID-19 disruption. Although there have been initiatives to decrease maternal mortality in many LMICs, this has not been the case for other women's health priorities which receive more attention and support in high income countries. In LMICs, the disruption in services and the re-prioritisation of services will lead to further challenges for women and their children, and will place women in even more difficult and vulnerable situations.

A significant impact of lockdowns related to the COVID-19 pandemic has been the increase in domestic violence many, and not just women, across the globe have had to endure (Abramson, 2020, United Nations Peacekeeping, 2020). Without sufficient protection, and with delayed responses, women (and their children) are vulnerable and subject to abuse. Women with injuries from abuse may not present at the local hospital immediately because of the lockdown restrictions. Care may therefore be delayed, leading to possible disability among this group and an increase in demand for rehabilitation after COVID-19.



Older adults

Social isolation, while protecting older people from COVID-19, also places them at risk due to the increased prevalence of other conditions they are already managing, including cardiovascular disease, neuro-cognitive and mental health problems. Older people suffering from co-morbidities may be discouraged from attending their local clinics and hospitals, or will be fearful of exposure, and are therefore unable to receive the care they require during the pandemic and are therefore at risk of a rapid decrease in functional ability.

Of particular concern is the safeguarding of the elderly in LMICs where 69% of the population are typically aged 60 years and over, and where health systems are already weaker (Lloyd-Sherlock et al., 2020). Access to healthcare may already be a challenge due to environmental (difficult terrains, areas not accessible by transport), financial or contextual reasons. For these individuals access to care under normal circumstances is difficult, but the pandemic has exacerbated these difficulties. We may therefore be facing a larger community of older individuals suffering from increased disability and loss of functional capacity due to COVID-19, even if they were never infected with it during this time.

Older people are at greater risk when contracting COVID-19 as its impact is more severe (Niu et al., 2020) and as a result the risk of dying from COVID-19 increases with age. Most deaths observed are in people older than 60, especially those with chronic conditions, such as cardiovascular disease. According to the WHO, "older people who experience COVID-19, including those admitted to ICU and/or treated with protracted oxygen therapy and bed rest, are more likely to experience pronounced functional decline and require coordinated rehabilitation care after acute hospitalization." (World Health Organization, 2020a).



People with existing conditions

Many conditions and treatments can cause a person to have a weakened immune system (immunocompromised), including cancer treatment, bone marrow or organ transplantation, and immune weakening medications (Centers for Disease Control and Prevention, 2020a). In addition, those suffering from existing conditions like COPD (Sanchez-Ramirez and Mackey, 2020), hypertension, diabetes, or HIV/AIDs, are at greater risk of suffering severe symptoms once infected by COVID-19, and also at greater risk of dying. These individuals may therefore forego attending their local clinics and hospitals to reduce exposure.

Of particular concern in LMICs are those individuals affected by HIV/AIDs and how their compromised immune systems will cope with a COVID-19 infection. Though there are preliminary suggestions that those on antiretrovirals (ARVs) may be protected from COVID-19 infection at some level (Ford et al., 2020), there is still the risk that immunocompromised individuals will suffer more severe COVID-19 infection responses and therefore avoid visiting their local clinics fearing exposure may be the best solution. However, these individuals risk declines in their function or exacerbation of their conditions, as they may not be receiving timely physiotherapy and rehabilitation. Greater efforts to prevent decline in function in these individuals is therefore required.



People with disabilities

Disability alone may not be related to a higher risk for contracting COVID-19 or of experiencing severe illness. However, some people with disabilities might be at a higher risk of infection or severe illness because of their underlying medical conditions or impairments. Adults with disabilities are three times more likely than adults without disabilities to have heart disease, stroke, diabetes, or cancer than adults without disabilities (Centers for Disease Control and Prevention, 2020c).

A United Nations (UN) report accurately highlights the impact of COVID-19 on those living with disability (box 2).

The UN report calls for all to pay particular attention to the needs of those living with disability during the pandemic. It highlights how the shift of priorities in many healthcare systems has led to a decrease in the rehabilitation services for those living with disability and how this will lead to even more disability. The UN specifically calls for the investment and development of support services and the implementing of inclusive services at local level, such as education and primary health care, including rehabilitation, as cornerstones for achieving sustainable development goals in person's living with disabilities (United Nations, 2020b).

Box 2 The impact of COVID-19 on those with disabilities



“The global crisis of COVID-19 is deepening pre-existing inequalities, exposing the extent of exclusion and highlighting that work on disability inclusion is imperative. People with disabilities—one billion people—are one of the most excluded groups in our society and are among the hardest hit in this crisis in terms of fatalities. Even under normal circumstances, persons with disabilities are less likely to access health care, education, employment and to participate in the community. They are more likely to live in poverty, experience higher rates of violence, neglect and abuse, and are among the most marginalized in any crisis-affected community. COVID-19 has further compounded this situation, disproportionately impacting persons with disabilities both directly and indirectly. An integrated approach is required to ensure that persons with disabilities are not left behind in COVID-19 response and recovery. All COVID-19 related action must prohibit any form of discrimination based on disability and take into consideration the intersections of gender and age, among other factors. Disability inclusion will result in a COVID-19 response and recovery that better serves everyone, more fully suppressing the virus, as well as **building back better**.”

(United Nations, 2020b)

In LMICs there are competing pressures on already limited resources and, with other needs prioritised, calls for investment in physiotherapy and rehabilitation for those living with a disability is acknowledged less.

An understanding of the longer term effects of COVID-19 for some individuals is emerging, as already noted, and this could have further consequences for those with a disability. It is therefore important to anticipate the potential increased need for physiotherapy and rehabilitation services. Many LMICs, and even well-equipped high income countries, will not cope with this surge in disability, or with the ramifications of delayed rehabilitation for those currently living with disability. This could also affect the ability for some to return to work, or fulfil other roles such as a family carer, impacting the economies of their countries.



Individuals in the lower income to no income brackets

The COVID-19 pandemic has directly affected world economies at unprecedented levels. Many people have already lost their jobs and further job losses can be anticipated in different sectors and locations. Others have had to take pay cuts, as many governments and businesses are unable to cope with the economic losses. After COVID-19, there is a risk that we will see many people unemployed and homeless. Of concern is that there is a strong relationship between poverty, disability and chronic disease. Poor people are often at greater risk of suffering chronic NCDs, being born with a disability or becoming disabled later in life, which negatively impacts on their chances of breaking the poverty cycle (Mitra et al., 2013, Sherry, 2014/2015). People with a disability are also less likely to find high-paying jobs, keeping them in a state of poverty. Poorer people are also less

able to access healthcare readily, and therefore there may be a delay in receiving adequate care, if at all. This further highlights the vulnerability of those living in fragile systems and LMICs and the impact on these populations post COVID-19.



Refugees and migrant populations

WHO advocates for the right to the enjoyment of the highest attainable standard of physical and mental health for all, including for refugees and migrants (World Health Organization, 2020f). The impact of COVID-19 and health support for these communities has been highlighted as a significant concern (Favas, 2020, Kluge et al., 2020, Truelove et al., 2020). The WHO ApartTogether study is assessing the public health and social impact of COVID-19 on refugees and migrants (World Health Organization, 2020f). For public health strategies to be successful in controlling the spread of COVID-19 national strategies have to include these communities in their plans.

This is a particularly vulnerable community and one significantly under-served by physiotherapy and rehabilitation (Landry et al., 2019), which will be further compounded during these times.



Potential changes in human resources and workforce planning after COVID-19

The human resources for rehabilitation are often a neglected part of workforce planning across settings. It is suggested that 92% of the burden of disease in the world (measured in terms of attributable years of life lost, or YLL) is related to causes that require rehabilitation professionals (Gupta et al., 2011). Despite greater need there is less availability of skilled rehabilitation professionals, including physiotherapists, in LMICs (Gupta et al., 2011).

A key concern is that after COVID there will be even less funds for rehabilitation professions, including physiotherapists, which will most likely make meeting the rehabilitation demands of a population even more difficult. If rehabilitation hasn't been prioritised in certain countries, including those in higher income countries, and if state budgets are under pressure, then it is inevitable that unless that government views rehabilitation as essential and as an investment, funds will be diverted elsewhere and cut where possible. We can only anticipate the significant impact further cuts could have on the profession and the people we serve worldwide.

The rehabilitation caseload after COVID-19 has yet to be fully recognised in terms of disability, cardiopulmonary, neurological, musculoskeletal and psychological complications, often layered on top of pre-existing morbidity. In addition, associated deconditioning from time in ICUs, or prolonged inactivity in hospital or at home, will also present itself as a rehabilitation priority. There is a need for coordinated and collaborative service delivery solutions across professions, agencies and sector.

There is a need for physiotherapists to be more visible and strong advocates in a commitment to make rehabilitation an essential service, and to insist that governments invest in rehabilitation for the better of the country (Phillips et al., 2020b). In LMICs this will probably also mean linking up public services with NGO and charitable sectors.

Humanity and Inclusion works with many vulnerable groups and has highlighted changes already made in rehabilitation services. Working practices have been adapted where continuing service

provision is safe, and physiotherapists, along with other rehabilitation personnel, on the frontline have taken on a great role relaying key messages about health and hygiene measures, as well as mental wellbeing support, to vulnerable groups, beneficiaries and other members of their community (Humanity & Inclusion, 2020b).

The physiotherapy and rehabilitation workforce, providing services for many vulnerable groups in LMICs, is often supported by those working for NGOs and the volunteer sector. International and in-country travel restrictions have significantly impacted the capacity to continue levels of service provision, even where safe to do so, as personnel returned to home countries with still limited movement options to return to assignments abroad. Whether the void has, or will be filled, is yet to be seen, but already strained systems are likely to be feeling the impact now. The availability of professional and voluntary personnel to assist rehabilitation will have an impact on the ability of the healthcare system to cope (Phillips et al., 2020a, Phillips et al., 2020b).



Just as the scale of the pandemic is huge, the scale of the rehabilitation response required for the survivors will need to be on a far greater scale than previous recent experiences of rehabilitation.

(Phillips et al., 2020b)

Conclusion

The burden of disease is undeniably disproportionately higher in LMIC settings compared to higher income settings. Physiotherapists, and other rehabilitation staff, globally are advocating hard to ensure that physiotherapy and rehabilitation is seen as an essential service. This aligns with the *WHO Rehabilitation 2030: Call to Action* initiative that called for “a concerted global action towards strengthening rehabilitation and health systems” to optimize health and function (Gimigliano and Negrini, 2017).

The current medical model, used in many health systems across the globe, generally demonstrates a continued lack of recognition for the role that rehabilitation has in managing the consequences and burden of disability on a country’s systems and economy (Morris et al., 2019). In LMICs particularly, there remains a general tendency not to invest in rehabilitation, despite the fact that failure to invest in rehabilitation has a significant impact on the person, family, society, and economy of a country. This current strategy needs to be challenged to bring about change now and in the future to support the required investment.

Services at present are underpinned more by an understanding of the initial mortality and morbidity from COVID-19 and less about longer term disability and ongoing rehabilitation. Normal rehabilitation service disruption experienced in high income countries (Phillips et al., 2020b) is likely to be exacerbated in LMICs.

Investment in physiotherapy, as part of coordinated rehabilitation service provision, is important. Governments across the globe, particularly in the LMICs, should recognise that this rehabilitation contributes not only significantly to an individual’s life, but also to the society and the economy of a country. Supporting people to return to work and reducing the need for health services makes economic sense.

In many settings, rehabilitation workers were insufficiently equipped with personal protective equipment (PPE), whilst being exposed to COVID-19 related risks at their workplaces. Acute material

shortage led to a prioritisation of other medical professionals for PPE distribution. This happened despite physiotherapists' continued work on the frontline in acute care settings with COVID-19 affected patients. This led to [World Physiotherapy's #PPE4PT advocacy campaign](#).

World Physiotherapy will continue to work within our wider alliances, such as the Global Rehabilitation Alliance, and with our partners, Humanity and Inclusion and ICRC, to advocate for the development and education of physiotherapists and rehabilitation services for vulnerable populations and fragile systems, many of which are located in LMICs.

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