

The Role of Physiotherapists in Advancing Sustainable Health within the Framework of the Sustainable Development Goals

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Introduction to Sustainable Development Goals (SDGs)

The pursuit of economic prosperity by humanity has resulted in significant environmental degradation. As the environmental damage accumulated over time and began to pose a threat to humanity, intervention became imperative (Bonnedahl, Heikkurinen, & Paavola, 2022). The concept of sustainable development became the focal point of these interventions. The 2030 Sustainable Development Goals (SDGs 2030) were established at the United Nations (UN) Sustainable Development Summit. This was held in September 2015. The United Nations SDGs comprise 17 core goals and 169 associated targets. These objectives underscore the fundamental tenet of universal human rights for all individuals by the year 2030. It is anticipated that nations will formulate their developmental agendas and strategies in alignment with these objectives. The new global goals place sustainability at the centre of development and emphasise that economic, environmental, and social concerns are common to all people living on Earth. Figure 1 shows the 17 main targets of the SDGs.

Figure 1

Sustainable Development Goals



Explanatory note: Quoted from the UN website ('THE 17 GOALS | Sustainable Development', n.d.).

The Correlation Between Healthcare and Sustainable Development

The health of the human species is inextricably linked to the concept of sustainability. Today, public health is under the greatest threat from climate change. There is an increasing prevalence of morbidity and mortality from extreme weather conditions, including floods, storms, and fires. There is also an increase in unplanned mass migration resulting from weather and resource conflicts, and in the incidence of diseases (Palstam, Sehdev, Barna, Andersson, & Liebenberg, 2022). Mitigating climate change will positively impact public health and reduce mortality. In addition, strategies for mitigating climate change that are informed by lifestyle factors have been shown to yield substantial co-benefits for health. It is widely acknowledged that

In order to provide a comprehensive overview of the topic, it is essential to consider not only the level of human capital but also the role of key indicators of health in the context of socioeconomic development. Sustainable development is impossible without human focus. Consequently, fundamental health-related objectives have been delineated for the purpose of sustainable development. One of the 17 SDGs is directly related to health. Goal 3 is entitled “Health and Quality of Life.” However, health is a priority for the economy. The stagnation inflicted on national economies by the past SARS virus outbreak and the recent coronavirus pandemic repeatedly remind us of the importance of this issue. Furthermore, a society comprised of healthy and well-nourished individuals will have a higher production and value-added output than societies with unhealthy nutrition and high mortality and morbidity rates. Land (natural resources) and labor, along with capital, are considered basic production factors. The labor factor is theoretically grounded in economics by the concept of human capital. Human capital encompasses the quantity, quality, professional experience, and health status of the labor force, enabling the more efficient use of other production factors. Investments in human capital are primarily measured by education and healthcare expenditures (Önder, 2020).

In addition to the impact of healthy communities on sustainability, another salient issue is the carbon footprint of the medical sector. The global healthcare sector is like a nation. If it were recognised as a nation, it would be the 5th largest producer of greenhouse gases. In the paradigm of climate change, Watts et al. have postulated that it signifies a substantial opportunity to redefine the socio-environmental determinants of health (Watts et al., 2015). This appeal is directed at all healthcare professionals and departments, with a view to achieving a substantial reduction in carbon use, the establishment of equity goals, and the enhancement of health outcomes.

Sustainable healthcare refers to a healthcare model that considers the social and ecological determinants that negatively impact public health, intervenes in the disease process as early as possible, and offers “lean” and cost-effective healthcare services. Integral to the healthcare system, physiotherapy exerts a substantial influence on sustainable

practice by virtue of its reliance on non-pharmacological, cost-effective, and low-carbon treatments that empower patients to manage their own care (Palstam, Andersson, Lange, & Grenholm, 2021). The following section will provide a detailed exposition on the synergy between sustainable development goals and physiotherapy.

The Role of Physiotherapy in Health and Well-being (SDG 3)

The health protection system is structured into five levels. The initial level, designated Primordial prevention, is defined as the implementation of measures aimed at averting the emergence or progression of risk factors. Health-related client education is the practice performed by physiotherapists at this level. Primary Prevention means preventing the occurrence of disease due to risk factors. In this context, physiotherapists play a crucial role in establishing and improving physical activity as a lifestyle habit. Secondary Prevention is preventing the development of disease complications. At this stage, physiotherapists provide support with prompt, optimized, and sustained care. Tertiary Prevention is to prevent disability and preserve the life expectancy of patients. Quaternary Prevention prevents unnecessary treatment and diagnosis. At the tertiary and quaternary prevention levels, physiotherapists support individuals through increased independence and rehabilitation (Padhan, 2023).

Physiotherapists play a crucial role in health promotion. They serve as part of the multidisciplinary healthcare team, developing rehabilitation programs specifically for a wide range of health conditions. These include chronic noncommunicable diseases (NCDs) and musculoskeletal disorders. NCDs and musculoskeletal disorders negatively impact both public health and individuals' quality of life, and are important reasons for seeking care. These health problems are associated with many modifiable lifestyle behaviors and risk factors. Physical inactivity, obesity, smoking, unhealthy diet, stress, and inadequate sleep have been identified as being associated with both chronic NCDs and chronic musculoskeletal disorders. Developing healthy lifestyle behaviors can prevent and manage these conditions and improve overall health and well-being. Physical therapists specialising in the treatment of musculoskeletal disorders frequently encounter patients suffering from chronic conditions in addition to unhealthy lifestyle behaviours. Therefore, physical therapists can support their patients' health and well-being (Bezner, 2015). Physiotherapists can play an important role in improving community health if they engage with local communities. The implementation of the Community Physiotherapist model has been found to enable physiotherapists to provide effective, appropriate, and safe interventions (Paci, Bianchi, Buonandi, Rosiello, & Moretti, 2023). Physiotherapists work closely with patients to design personalized exercise programs that are sustainable and accessible, taking into account the individual's needs and abilities. This proactive approach to public health encourages people to integrate regular physical activity into their daily routines (Abaraogu, Edeonuh, & Frantz, 2016).

Quality of life has multiple components, and they interact with each other. Physical health, social relationships, psychological state, environmental factors, and individual satisfaction all play a significant role in understanding an individual's quality of life. ('The World Health Organization Quality of Life Assessment (WHOQOL)', 1995). According to the World Confederation of Physical Therapy (WCPT), physiotherapists are healthcare professionals who develop, maintain, and restore people's functional abilities, maximum range of motion, and muscle strength. They work in the areas of preventing and treating or intervening in diseases without promoting health, but especially in rehabilitation ('What Is Physiotherapy?', n.d.). Physiotherapists help individuals to achieve the best possible quality of life by considering physical, emotional, psychological, and social well-being (Schramlová et al., 2024). Physiotherapists play a crucial role as emotional support in managing injury or pain ('In Brief', 2024).

Physiotherapists in the Context of Education (SDG 4)

Regarding their specialties, physical therapists train new physical therapists in academia, trainee physical therapists in clinics, other members of the healthcare team, patients and clients, and formal and informal caregivers. This enables them to play a role in improving the quality of healthcare. Furthermore, physical therapists can educate communities about basic health, mobility, and injury prevention. Their roles range from individual education to physical training and even ergonomic environmental design (Klassen, MacKay, Moher, Walker, & Jones, 2000). The community physiotherapist model has been developed in this context. Under this model, community members and external stakeholders, including physiotherapists, collaborate to address the community's needs (Varnado, Mejia-Downs, Scharmann, & Richardson, 2024). It is a commonly held view that children with disabilities are less likely to enrol in school, persist with their education, and make progress (Nair, Radhakrishnan, & Olusanya, 2023). Regarding the inclusiveness of education, physiotherapists can play an important role in ensuring that individuals of all age groups with disabilities receive quality education.

Sustainable Working Practices and Physiotherapy (SKH 8)

Quality of work life is important because nearly half of an adult's life is spent engaged in productive activities. Organizations that focus on providing a healthy work environment and quality of work life are more likely to gain strength and reduce the risk of employee turnover (Afroz & Haque, 2021). Physiotherapists, knowledgeable about the anatomy, biomechanics, and kinesiology of the human muscular system, develop intervention plans for their patients regarding healthy work environments and ergonomics. They may also work within companies to develop methods to improve the quality of work in workplaces.

In addition to their clinical skills, physiotherapists can identify injury risks through in-

depth analysis of job tasks, contribute to injury prevention strategies by conducting task analyses. They can also provide ergonomics and manual handling training and conduct health promotion activities. Having a physiotherapist in the workplace enables the development of disability management strategies, such as pre-employment screening programs and employee functionality assessments, and returning-to-work programs (Adam, Peters, & Chipchase, 2013; Donovan, Khan, & Johnston, 2021). All of these can reduce workplace accidents and illnesses, reduce employee absenteeism, and increase productivity. Furthermore, physiotherapists are capable of overseeing wellness programs. The workplace is a setting in which employees are employed and which has the capacity to contribute to their health. It is also a setting in which it is possible to promote so-called “decent work” and economic growth.

Reducing Inequalities Through Physiotherapy (SDG 10)

Unfortunately, inequalities persist worldwide. Inequalities can be based on biological factors such as age, ethnicity, race, gender, and disability; socioeconomic factors such as income and class; and preferences such as sexual orientation and religion. These groups are defined as vulnerable groups (Arıca, Çakır, & Kağnıcı, 2023). The definition of the physiotherapy profession includes the goals of the individual’s participation in society throughout life, the protection and restoration of health, and the improvement of movement ability, physical activity, and functional abilities (‘Dernek Tüzüğü’, n.d.). As the definition of the profession makes clear, it aims to eliminate disadvantages or increase the participation of disadvantaged individuals in society. This enables individuals to maintain or regain independence and contribute to productivity through vocational rehabilitation, even if they are disabled. Furthermore, due to their expertise in human kinetics, rehabilitation, and restoration of function, physical therapists can detect potential issues long before they manifest as disabilities. Therefore, they are indispensable in the timely diagnosis and management of disabilities (Deepak & Abhijit, 2025).

In many societies, healthcare workers and authorities confront the challenge of ensuring equitably distributed healthcare for individuals residing in areas characterised by a low socio-economic status. Reduced access to healthcare has been demonstrated to have a detrimental effect on health, a phenomenon that is compounded by the pervasive influence of social determinants of health. Physiotherapeutic interventions are a cost-effective solution for the treatment of musculoskeletal conditions, often proving more economical than treatments administered by other health professionals (Baumbach, Feddern, Kretzler, Hajek, & König, 2024; Fatoye, Wright, & Gebrye, 2020). Individuals living in poverty, especially those who are homeless, are considered to be among the most vulnerable members of society. Research has indicated that the provision of physical therapy services within the community, where individuals reside, procure sustenance

and engage in social interaction, can serve as an efficacious strategy to enhance access to care for those experiencing homelessness or economic disadvantage (Oosman, Weber, Ogunson, & Bath, 2019). Nevertheless, the integration of physical therapists within primary care and home care settings may be a superior approach to enhancing accessibility. Digital health tools such as telemedicine, telerehabilitation, mobile health, and e-health can replace or complement in-person healthcare visits. They contribute to reducing the carbon emissions of healthcare services by reducing patient and staff travel (Palstam & Lange, 2024). Digital health is becoming increasingly widespread to address inequalities in access. A programme of scientific research is currently ongoing to investigate the advantages and disadvantages of the phenomenon under scrutiny.

Climate Action and Physiotherapy (SDG 13)

While human health has improved in recent years thanks to improved access to healthcare and improved disease control, this has come at the expense of environmental health. Healthcare contributes to some planetary health concerns, such as climate change; therefore, healthcare professionals, including physiotherapists, both contribute to the problem and are integral to the solution. In comparison with professions that utilise techniques requiring greater consumption of resources, such as imaging or surgery, physiotherapy has been proposed as a profession with a reduced environmental impact. This is due to its emphasis on hands-on or exercise-based assessment and interventions, which result in a reduction in environmental impact (Pichler, Jaccard, Weisz, & Weisz, 2019). A meta-analysis of extant literature has identified an increasing interest and involvement of the physiotherapy profession in combating climate change and its impacts on health (Li, Fryer, Chi, & Boucaut, 2025).

Climate change has multifaceted impacts. Mental health threats, respiratory diseases, cardiovascular diseases, infectious diseases, increased prevalence of foodborne and waterborne diseases, injuries, and premature deaths associated with extreme weather events, and changes in geographic distribution are expected due to climate change (CDC, 2024). To adapt to the effects of climate change, specific actions can be taken at different levels. These actions include environmental actions as well as social and behavioral actions (Zhao et al., 2022). Physiotherapists have the capacity to make a significant contribution to the maintenance of physical function and quality of life in individuals in response to changing environmental conditions. Climate-related stress and physical disabilities can limit activities of daily living, particularly for individuals with chronic illnesses or the elderly. Physiotherapists can provide both preventative and rehabilitative support by developing exercise programs, breathing techniques, and adaptive strategies that will increase their resilience to climate change.

Partnerships for Progress (SDG 17)

Sustainable Development Goal 17 emphasizes the importance of global collaboration and multi-stakeholder partnerships in achieving all goals. The active role of physical therapists in this goal supports not only individual patient care but also the development of population-based health approaches. From a health equity perspective, healthcare practitioners acknowledge the influence of socio-political factors on health, to address health inequalities, minimise healthcare expenditures, and adapt to the demands posed by pandemics such as the ongoing global outbreak of Coronavirus (Dunleavy et al., 2022). Active participation of physiotherapists in the development of national health policies is necessary to reduce health inequalities and increase the physical well-being of society (Varnado et al., 2024). In this context, collaborations with policymakers, academics, and international organizations increase the visibility of the physiotherapy profession on the global health agenda and accelerate the realisation of SDGs. Joint initiatives by the World Confederation of Physiotherapy and the World Health Organization, in particular, strengthen the leadership capacity of physiotherapists in public health programs and contribute to the adoption of evidence-based practices at the policy level ('Global Action Plan on Physical Activity 2018–2030', n.d.). This multi-layered collaborative approach makes physiotherapists not only healthcare providers but also active partners in sustainable development.

Conclusion

Physiotherapists are assuming a progressively significant role in the pursuit of the SDGs, transcending their traditional role as individual health service providers to become pivotal agents in community health promotion and the mitigation of health inequalities. Within the SDG framework, physiotherapists have a multifaceted role that extends beyond the mere improvement of patients' functional capacity. They participate in public health programmes, education and awareness campaigns, community-based interventions, and contribute to policy development processes. The active involvement of these professionals in national and international collaborations has been demonstrated to enhance the sustainability of healthcare services by fostering knowledge and resource sharing, and contributing to the reduction of carbon footprints. Consequently, physiotherapists serve as a critical bridge in the implementation of the SDGs and directly facilitate the achievement of the sustainable development vision by improving health and well-being at both individual and societal levels.

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