

**ORIGINAL ARTICLE**

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<https://doi.org/10.5281/zenodo.17914125>**Historical Development And Economic Impact Of Physiotherapy** **Şükran İpek Öksüz<sup>1</sup>**<sup>1</sup>Hasan Kalyoncu University, Gaziantep, Türkiye**ABSTRACT**

**Introduction:** Physiotherapy is a healthcare discipline focused on promoting functional mobility, preventing disability, and enhancing quality of life through evidence-based interventions.

**Objective:** This study aimed to evaluate the historical institutionalization of physiotherapy and its economic reflections in global health systems.

**Methods:** A literature-based review was conducted using international policy documents, historical reports, and economic evaluation studies addressing physiotherapy's development and integration into healthcare systems.

**Results:** Findings indicated that physiotherapy evolved from wartime rehabilitation efforts into a professionalized and cost-effective healthcare service. Recent digital transformations have further expanded its clinical, preventive, and economic scope.

**Conclusion:** Physiotherapy has become a strategic component of global health systems, contributing both to patient-centered care and to sustainable health economics. Its integration into wellness models and digital health platforms underscores its growing multidisciplinary importance.

**Keywords:** Physiotherapy, Health Economics, Digital Health, Rehabilitation, Preventive Medicine.

**INTRODUCTION**

Physiotherapy is a science-based healthcare discipline that promotes functional mobility, enhances quality of life, and contributes to overall health through a holistic approach. Emerging with the advancement of modern medicine, it gained importance beyond clinical rehabilitation and became an integral part of public health policies. In the early 20th century, treatments for war injuries triggered its institutionalization and paved the way for its development into a field with scientific, social, and economic dimensions (1). The World Health Organization (WHO) and other international bodies define physiotherapists' roles as not only therapeutic but also preventive and educational, positioning them as key elements of health policy (2).

Studying the historical development of physiotherapy and its role in health economics enriches the literature and guides policymakers and health planners. This study examines the field's evolution and economic impact by exploring its place in modern health systems, cost-effectiveness, and contribution to social welfare. Physiotherapy emerged as an independent discipline in the early 20th century, shaped largely by the need to rehabilitate war casualties. Its initial focus was helping patients walk after traumatic injuries, restoring limb function, and improving quality of life. The first organized units appeared in military hospitals — particularly in the United Kingdom and the United States after World War I — where trained nurses applied basic mobilization techniques. Maintaining and restoring musculoskeletal function soon became essential to multidisciplinary rehabilitation (3).

Since the 1950s, expanding health services and a clearer scientific foundation accelerated physiotherapy's institutionalization. Undergraduate programs were founded worldwide, the profession gained legal recognition, and clinical protocols began integrating physiotherapy. Services moved beyond hospitals; community-based care brought home rehabilitation, support for older adults, and long-term chronic disease management. This shift positioned physiotherapists as active decision-makers within healthcare teams rather than passive practitioners (4).

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## METHODS

This study uses a qualitative design to explore the historical institutionalization of physiotherapy and its economic impact. The guiding research question is: “How has the profession evolved from the post-war period to the digital era, and what are its economic and social implications within healthcare systems?” Secondary data analysis was conducted by systematically reviewing historical records, policy papers, statistical reports, and peer-reviewed articles in physiotherapy, health economics, and public policy. Data sources included international and national institutions such as the WHO, Australian Physiotherapy Association (APA), Union of Chambers and Commodity Exchanges of Turkey (TOBB), and the Organisation for Economic Co-operation and Development (OECD) (5).

The analytical framework was constructed around three main themes:

1. Institutionalization and Professional Recognition – legal frameworks, academic education, and integration into clinical protocols.
2. Economic Implications of Physiotherapy – cost-effectiveness, public spending, private sector investments, and insurance coverage.
3. Transformation of Service Models – community-based healthcare, chronic disease management, digitalization, and human rights-based policies.

The content analysis process followed systematic coding stages: (i) data familiarization, (ii) identification of recurring categories, (iii) thematic clustering, and (iv) interpretation of findings in light of the research question. The results were supported with descriptive models, tables, and graphics illustrating public expenditure trends, insurance penetration, patient satisfaction, and private sector contributions to healthcare systems. Through this methodological approach, physiotherapy is examined not only as a clinical practice but also as a strategic component of economic sustainability, social cohesion, and rights-based public health policies.

## Purpose

The main purpose of this study is to investigate the historical development and institutionalization of the physiotherapy profession and its economic impact on health systems. Physiotherapy has evolved from rehabilitating war-wounded patients to today's digital health solutions. Its significance extends beyond clinical effectiveness to include public health expenditure, private sector investment, and contributions to healthy living. This study also aims to reveal how physiotherapy aligns with cost-effective health services, chronic disease management, aged care, and the post-pandemic digital transition, highlighting its strategic benefits. In this context, the intention is to provide policymakers, health economists, and professionals with a historically framed, data-based analysis.

## HISTORICAL DEVELOPMENT

### 1914-1920: Organize The First Post-War Applications

The institutional foundations of physiotherapy practice were initially based on the need for acute rehabilitation. Wounded soldiers during the war in order to regain the mobility of physical interventions has been applied; in this case, mobilization techniques, specially trained health personal is obliged to be trained. Great Britain and the United States that was created in the first physiotherapy associations, nursing and physiotherapy retire from the profession, has become an area of its own application. During this period, the applications are more and more electrotherapy was limited with exercises and massage techniques. However, the war to produce the massive injuries, physiotherapy preventive, not curative, as a profession, with emphasis on aspects respectively. In economic terms, in this period, the US military budget is located in an area was assessed as limited employment (6).

### 1950-1970: Education And Community-Based Service

Since the 1950s, with the initiation of physiotherapy education at medical universities, the profession has become institutionalized and acquired an independent professional identity. At the same time, outside the hospital in physiotherapy practices and extend the understanding of integrated community

based rehabilitation (7). The expansion of outpatient services and the increase of the elderly population in this area was raised by the service request; home care physiotherapy applications has become integrated with the individual's social environment. This semester, not just from illness, physiotherapy, preventive health services within a role is regarded as the beginning of. In economic terms, the recognition of the legal profession in the field of employment as well as public hospitals and rehabilitation centers, the opening of the share of health budgets allocated to physiotherapy for the first time, it refers to a process TIGI.

### **1981: WHO Under The Leadership Of Professional Recognition**

In 1981, the World Health Organization proclaimed the “International Year of Disabled Persons” physiotherapy has been a critical turning point gained recognition at the global level. WHO this year published under reports, physical therapists prevention of disability management and the role of the society in the integration process is clearly defined; vacancies in public health policies in many countries led to a physiotherapist place (8). This professional development only in terms of visibility, but also of physical therapists to be covered by Social Security, salary and employee rights, such as the regulation of has had a structural impact. This period in terms of social policy physiotherapy the performance of services not only clinical, and inclusive society to be evaluated in accordance with the principles of human rights has provided.

### **1990-2010: Technology Integration And Chronic Disease Management**

Since the 1990s, physiotherapy has evolved into a specialty that isn't from manual applications only. The development of electrotherapy devices, biomechanical analyses, the proliferation of tests, and functional capacity of a physical therapist b integrated into clinical decisions with scientific equipment has increased. Especially cardiopulmonary, neurological rehabilitation, and has accelerated trends such as oncologic specialization in the lower areas (7). At the same time, this period, diabetes, obesity and chronic diseases such as osteoarthritis management process that takes place on the front lines of physiotherapists in shipment. In economic terms, in this stage, receives a reimbursement of the insurance companies rehabilitation services, physiotherapy and therefore cost-effectiveness concretely proves a term that has been.

### **2010-2025: Digitization, The Private Sector In The Health And Growth Of Cost-Effectiveness**

The last fifteen years, physiotherapy in the field of digital transformation, increase private sector investments and a clear period of activity within the health economy represents. E-health applications, services and telerehabilitation artificial intelligence-assisted assessment systems made independent of time and place of physiotherapy services (8). Like Turkey and developing countries, private hospitals, sports, health centers, and home care services physical therapist through employment increased rapidly; physiotherapy services only recovery after illness, but also wellness and preventative health strategies. Cost-effectiveness is high, shorten the duration of hospital stay, surgery is an alternative to the importance of physiotherapy in the service area, and has been accepted by the social security institutions and health systems (9).

COVID-19 pandemic, it's a global crisis that transforms both clinical and economic aspects of physiotherapy services; especially respiratory physiotherapy and applications telerehabilitation have come to the fore. During a severe pandemic require hospitalization intensive care has increased the need for pulmonary rehabilitation after loss of functional capacity. A clinical analysis from China reported that a 4-week respiratory physiotherapy program for COVID-19 patients was associated with an average 2.3 day reduction in hospital stay and potential cost savings. These results are preliminary and reflect specific pandemic conditions and local health system responses (10). Europe is a multi-center study telerehabilitation provided through home-based physiotherapy services patient satisfaction rate of over 90% and has been shown to reduce the burden on the health care system (7). In the United States Post covid-syndrome (long-COVID) the role of physiotherapists in the treatment of the health insurance system have been included in; functional breathing exercises and mobilization programs, showed the effect of reducing both morbidity and health care expenditures. In addition, the pandemic gained momentum with the digitization of the process of physiotherapy; e-health solutions remotely via online

exercise programs, has provided the advantage of accessibility, even in developing countries. In this process, physiotherapy services, not only therapeutic, but also have a key role in terms of economic sustainability. In China, COVID-19 post-respiratory physiotherapy and rehabilitation centers investments in 2020-2022 between 65% and increased. These data suggest that the pandemic not only redefined the field of physiotherapy but also highlighted its increasing economic value, marking a turning point.(12).

### **Economic Contribution Of The Private Sector In The Growth And Physiotherapy**

In the last ten years of physiotherapy services in the private sector and economic visibility along with the transformation of the global healthcare market, has increased significantly. In advanced countries, middle income countries such as Turkey, private hospitals, sports and Orthopaedic Centers, home care companies, and individual practice through physiotherapy services has increased the demand for. In this process, the state investments in the field of Physical Medicine and rehabilitation remains fixed, while private sector employment has gained momentum and hardware investments (12). Physiotherapy, lower risk and a lower cost option compared to pharmacological treatments and the way that an insurance system, “cost-effective service” category, has entered into.

Physiotherapy, global health systems in low risk of complications and long-term the effect of reducing costs thanks to the E in many countries, surgical and pharmacological treatments compared to cost-effective services” category are evaluated. In Australia, a recent cost-effectiveness analysis suggested that, for certain low back pain cases, physiotherapy management was associated with approximately 42% lower total health expenditure compared to surgical intervention; however, these findings are context-specific and may not be generalizable to all musculoskeletal conditions.” (13). According to The UK National Health Service NHS data, early physiotherapy intervention in knee osteoarthritis has been linked to up to a 30% reduction in the need for surgery, potentially resulting in cost savings. These outcomes, however, are condition-specific and may vary depending on patient populations and healthcare system structures in Canada, physiotherapy management helps reduce the burden on the public health budget by shortening hospital stays (14). In addition, studies in the United States, Studies from the United States indicate that incorporating physiotherapy into postoperative rehabilitation may shorten average hospital stays by about 2.5 days and reduce associated costs by an estimated \$5,000–8,000 per patient. These estimates, however, depend on procedure type, patient profile, and institutional practices (15). These examples physiotherapy activity, not only clinical, but also political health intervention that contribute to a strategic documents shows that in terms of economic sustainability (11).

### **The Economy Of Physiotherapy And Wellness**

Physiotherapy is not only for the treatment of diseases; also resume a healthy life deaths struggling with obesity, improving sports performance and as a tool for improving the quality of life has become one of the strategic components of the global health care economy. The World Health Organization in the Prevention of chronic diseases, while emphasizing the role of physical activity, physical therapists estimates that are positioned as the guiding professionals in this process (11). Especially in the field of obesity management and weight control, physical therapists individualized exercises an important role in the control of metabolic diseases through. In a study conducted in the United States, multidisciplinary weight loss program in the area is a physical therapist in the support of individuals, groups treated with only diet than a 25% loss was shown to provide higher fat mass (5). In the UK, with the help of a physical therapist who work in wellness centers, sports clubs and sports injuries are reduced by 35%, this situation is health, it is stated that a saving of GBP 400 million annual returns to the System (13).

Additionally, the wellness and Fitness Centre Wellness in conjunction with the growth of the market has also become an indispensable component of physiotherapy services. Global economy has reached a size of 5.6 trillion dollars by 2023 as of life, clinical exercise and physical rehabilitation services applications constitute a significant portion of that pie (16). Physiotherapists, in this economy they are not only service providers; at the same time, mobile health applications, digital platforms and fitness, home-based exercise as entrepreneurs developing technologies is located. This aspect of physiotherapy, and treatment of diseases beyond that allows you to remain active and productive area of economic and social investment has become a lifelong.

## DISCUSSION

Physiotherapy, which historically originated from the rehabilitation of war victims, has gradually evolved into an independent scientific discipline and a strategic health field. In this study, the evolution of the physiotherapy profession since the early 20th century has been examined in relation to institutionalization, technological integration, and the digitization of health and wellness economies, emphasizing its multidimensional integration into healthcare systems. This transformation reflects not only the consolidation of professional identity and service models but also significant impacts on health policy, public budgets, and private sector investments. National and international data demonstrate that physiotherapy is positioned as a cost-effective health service, reducing the risk of complications compared to surgical and pharmacological alternatives and alleviating the financial burden on healthcare systems. Beyond its therapeutic value, physiotherapy plays a preventive role in chronic disease management, elderly care, obesity control, and long-term rehabilitation, thereby generating lasting social and economic benefits. Across diverse geographies, from developed nations to developing economies, physiotherapy has contributed to professional growth, expanding employment opportunities in both public and private healthcare markets.

The COVID-19 pandemic accelerated the digital transformation of physiotherapy, enabling it to become more independent of place, accessible, and sustainable. Telerehabilitation, mobile health applications, and artificial intelligence-assisted systems have enhanced service quality while simultaneously reducing healthcare expenditures. These innovations demonstrate that physiotherapy is not confined to the clinical setting but has also become a fundamental component of public services, human rights-based social integration, and health-driven economic sustainability.

To further consolidate the strategic role of physiotherapy, multidimensional policy recommendations must be developed. Physiotherapy should be integrated into national health policies not only as a therapeutic service but also as a preventive, educational, and digitally supported solution. For such integration to be effective, job descriptions, competencies, and professional boundaries must be clearly defined, legally secured, and standardized across health systems. Furthermore, considering its cost-effectiveness, both public and private insurance schemes should expand coverage of physiotherapy services, enabling a larger segment of the population to benefit. The integration of physiotherapy into digital health tools such as telerehabilitation platforms, e-health systems, and AI-based exercise technologies should be encouraged, while empirical studies focusing on the economic impact—using measures such as DALY (Disability-Adjusted Life Years), QALY (Quality-Adjusted Life Years), YLD (Years Lived with Disability), YLL (Years of Life Lost), HALE (Health-Adjusted Life Expectancy), and HLY (Healthy Life Years)—must be expanded to provide concrete evidence of its contribution. These indicators would make more visible physiotherapy's role in reducing disease burden, increasing healthy life expectancy, and lessening the economic strain on societies. At the same time, universities should diversify undergraduate and graduate physiotherapy programs, expand areas of specialization, and strengthen both academic and clinical infrastructures.

## CONCLUSION

Ultimately, physiotherapy should not be regarded merely as a therapeutic tool for individual healing but also as a central element of wellness, sports, public health, and health economies. In this context, physiotherapists must be recognized as strategic partners in building inclusive, sustainable, and economically viable healthcare systems. In conclusion, physiotherapy contributes not only to the recovery of individuals but also to the overall improvement of public health, economic sustainability, and the development of comprehensive health policies. Strengthening global professional standards and ensuring the financial sustainability of physiotherapy services will be essential for expanding its impact in the coming decades.

## DESCRIPTIONS

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