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# Reimagining Physiotherapy Education in Africa: A Review of Physiotherapy Training in Nigeria

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## ABSTRACT

Physiotherapy education (PTE) plays a vital role in shaping the future of healthcare in Africa, and Nigeria in particular. This review aims to explore the current state and challenges of PTE in Nigeria and Africa, with reference to global perspectives. Our findings highlight the steady growth of PTE in Nigeria but also identify several challenges that need to be addressed in order to produce highly skilled and competent physiotherapists. These include the need to review and update the curriculum to incorporate courses on disease background and progression, and to foster closer collaboration between academicians and clinicians. The review also recommends collaborating with physiotherapy training institutions in developed countries as a means of raising the standard of PTE in Nigeria. By addressing these issues, we can ensure that the next generation of physiotherapists is well-equipped to meet the healthcare needs of the African population and contribute to the overall development of the continent.

**Keywords:** *Physiotherapy education, Curriculum, Mistreatment, Professionals, Physiotherapist*

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## INTRODUCTION

As the physiotherapy profession continues to evolve and meet the changing needs of the healthcare system, so must physiotherapy education (PTE) adapt and innovate too. PTE is a crucial component of the healthcare landscape, as it trains the next generation of physiotherapists who will provide high-quality services (1, 2). In this context, it is essential to examine the current state and challenges of PTE in Nigeria, with reference to global trends and developments.

PTE has experienced significant changes in recent years, driven by factors such as globalisation, technological advancements, and economic and political instability (3). The PTE aims to produce graduates who are expected to become independent in decision-making, accept responsibility and become accountable to all stakeholders (4). It is structured to ensure that the standard of the physiotherapy profession is maintained by producing physiotherapists whose decisions are respected and who can showcase quick, yet flexible problem-solving skills to address the changes in technological and social systems. PTE is a high level of education, with the role and context evolving with the nature of the profession (5).

In many countries, PTE has evolved beyond its original focus on preparing students for a paramedical role, to become a high-level profession in its own right. Within the physiotherapy context, licensed physiotherapists have the authority to conduct a clinical assessment, provide diagnosis and tailor individualised management to patients. Physiotherapy graduates are trained at tertiary institutions rather than within the hospitals alone (5). Beyond the entry-level, that is, the preparation and competency for practice level, it is also crucial to view PTE as an ever-going process (5). Increasingly, there has been the development of educational strategies such as problem-based learning/simulation models to ensure that professionals catch up with the dynamicity of health systems (5, 6). PTE consists of modules that are aimed at achieving professional competence (7). According to Kurunsaari et al. (8), professional competence is defined within the context of physiotherapy as the “ability of a practitioner to examine and advise patients, handle manual therapies and therapeutic exercise, and use special disease-specific and evidence-based knowledge”. These values, in addition to soft skills such as emotional intelligence and communication skills with interprofessional interactions, define professional competence. Also, as a result of the increasing clinical responsibilities, PTE has undergone changes from its degree structure to the introduction of residency/fellowship programmes (8).

Evidence of the evolution and advancement of PTE is magnified in Western countries (9). For example, in the United States, the United Kingdom and Australia, the entry-level degree for physiotherapy practice has moved from a bachelor’s degree to a master’s degree or even a Doctor of Physiotherapy (DPT) level (1, 10). This trend has begun to influence developments in other countries, including Nigeria.

## **A GLOBAL PERSPECTIVE ON PTE**

As the world confronted the COVID-19 pandemic and other global health challenges, it became apparent that it is important that everyone’s efforts align with the United Nations Sustainable Development Goal 3: to ensure healthy lives and promote well-being (11). The high burden of non-communicable diseases, an aging population, the impact on mental health, and climate change all underscore the need for this goal (12, 13). In this context, physiotherapy services are increasingly being called upon to adopt approaches that promote health, prevent diseases and rehabilitate to optimise function (14). To meet these challenges effectively, PTE must equip current and future physiotherapists with the knowledge, skills and competencies to take ethical responsibility for the health of individuals and communities.

Ensuring that PTE meets these standards and prepares graduates to tackle global health challenges requires collaboration and coordination at the international level. For example, the World Confederation for Physiotherapy (WCPT) is an international association that was founded in 1951 to serve as a global voice for the advancement of the physiotherapy

profession. The WCPT works to ensure the recognition of physiotherapy and its crucial role in improving health and well-being (15). Similarly, the American Physical Therapy Association (APTA) supports the development of competent physiotherapists who are able to exert their roles effectively (16). Both the WCPT and the APTA promote high standards of education, research and practice as a way to ensure that physiotherapists are prepared to meet the challenges of the profession.

As a member of the WCPT, Nigeria is working to promote the development of high-quality PTE. However, there are still challenges and disparities that need to be addressed to ensure that PTE in Nigeria is of the same high standard as that in other countries. For example, there may be a need to review and update the curriculum to ensure that it meets the latest best practices and standards (17). Overall, the global perspective of PTE highlights the importance of ensuring that PTE is of the highest quality and prepares graduates to meet the challenges of the profession, no matter where they are located.

### **PTE in Nigeria**

The history of physiotherapy in Nigeria can be traced back to 1945, when two British licensed physiotherapists, Miss Manfield and Mr. Williams established the profession in the country (18, 19). They began a three-year diploma programme to train assistant physiotherapists at the Royal (now National) Orthopaedic Hospital in Igbobi, Western Nigeria (19). This diploma programme was later converted into a degree programme, first at the University of Ibadan in 1966 and then at the University of Lagos in 1977 (19). In the same year, a Bachelor of Medical Rehabilitation-Physiotherapy degree programme was also introduced at the Obafemi Awolowo University (19). The curriculum of these early PTE programmes was designed to promote interdisciplinary education and provide clinical experience in both hospital and community settings (20).

Since then, PTE in Nigeria has undergone further evolution and expansion. In 1998, the Nigerian physiotherapy degree programmes across different institutions underwent a curriculum review, leading to the transition to a 5-year entry-level professional programme (21). Today, there are 12 universities in Nigeria that offer Bachelor of Physiotherapy (BPT) or Bachelor of Rehabilitation (BMR) degree programmes, including the University of Ibadan, Nnamdi Azikwe University, Obafemi Awolowo University, University of Lagos, University of Nigeria, Bayero University Kano, University of Maiduguri, University of Benin, Bowen University, University of Ilorin, Federal University Dutse and Ondo State University of Medical Sciences (20). The medium of instruction in these programmes is typically through classroom teaching, clinical experience, laboratory work and a final-year research project that is carried out as part of the degree requirements (22).

In Nigeria, the regulation of PTE is the responsibility of two separate and autonomous bodies: the Medical Rehabilitation Therapist (Registration) Board of Nigeria (MRTB), under the Federal Ministry of Health and the National Universities Commission (NUC), under the Federal Ministry of Education (20). These bodies are responsible for accrediting and maintaining high standards for physiotherapy degree programmes in the country (20). Based on recommendations from these regulatory bodies, the BPT curriculum in Nigeria typically includes premedical subjects such as natural sciences, medical sciences and core physiotherapy (preclinical and clinical) courses, following a traditional model similar to that used in medical schools (23).

Clinical education is a core element of all entry-level physiotherapy programmes (24, 25). This element extends to PTE in Nigeria. Clinical education is defined as “the supervised acquisition of work readiness skills and provision of clinical opportunities for students to attain competence at a level of a beginning practitioner by applying theoretical and evidence-based knowledge, skills and attributes developed in academic study, and building on these through interaction with clients and professionals” (26). The delivery of clinical education in physiotherapy programmes in Nigeria can vary across institutions (27). Some studies have found that a “shared responsibility model” is commonly used, in which both clinicians and students have a role in the learning process (27). Students are guided by licensed physiotherapists, known as clinical educators or clinicians, during clinical rotations (28). The clinical educator plays a crucial role in clinical education and is responsible for daily tasks and the overall provision of high-quality student clinical learning experiences (2). In fact, most students believe that the clinical educator is to blame for the success or failure of their clinical learning experience. These educators are chosen in Nigeria from universities and healthcare organisations, including teaching hospitals, specialist hospitals, medical centres and community-based facilities, both public and private (28, 29). Although this model is effective in some institutions, other institutions have reported some challenges, particularly due to low faculty-to-student ratios that can hinder effective implementation (27, 17). Alternative models of clinical education, such as the problem-based learning model, have also been explored in some institutions (27, 17). The problem-based learning leverages real-world problems or practices to promote the understanding of concepts (17).

Furthermore, regarding clinical education in Nigeria, there are no guidelines establishing the minimum years of clinical experience required for a physiotherapist to become a clinical educator. In addition, a lack of formal training in clinical education may lead to inconsistencies in the quality of clinical education (17, 2). Ideally, a successful clinical education requires that a clinical educator possesses, the necessary academic qualifications (B.SC/M.SC/Ph.D.), good clinical knowledge, a profound skill set, quality years of experience and formal training in clinical education in order to provide the clinical student with high-quality clinical learning experiences, however, this may not always be the case in Nigeria (2). Also, clinical hours or the amount of time physiotherapy students spend in practical training in real-life clinical settings are an important component of PTE (30). PTE typically includes a significant number of clinical hours in order to prepare students for the licensure examination and entry into the workforce (31). The World Confederation for Physical Therapy initially recommended a minimum of 1,000 clinical hours, but this may not be attainable for institutions with shorter training programmes. Now, institutions are required to set a minimum of acceptable clinical hours approved by their licensing body (32). In Nigeria, there is a lack of consensus on the optimal number of clinical hours required and a lack of data on how the clinical hours in Nigeria compare to those in other countries.

Despite the progress that has been made in PTE in Nigeria, there are still challenges and gaps to be addressed. For example, a study by Balogun (20) found that some physiotherapy programmes in Nigeria struggled with inadequate staffing, inadequate resources and facilities and limited opportunities for clinical placements. A study carried out by Balogun et al. (33), established that the total number of core lecturers for the physiotherapy undergraduate programme in the 12 universities earlier mentioned is 116, with the total number of enrolled BPT students in 2038. This brings the lecturer-student ratio (17:6), with the least ratio found at Bowen University (2:5) and the highest ratio at the University of Nigeria, Nsukka (66:3) (34). Although the average lecturer-student ratio in Nigeria is higher than the norms reported by undergraduate physiotherapy programmes in the United States

and the United Kingdom (29), the lecturer-student ratio could have an inverse relationship with the quality of education offered in these universities. This is explained by the argument that physiotherapy, being a hands-on profession, requires closer supervision of students, particularly in the clinical phase by lecturers (33). Thus, the lecturer-student ratio ought to be lower than the reported values in Nigeria.

There have been efforts to address some of the challenges faced by PTE in Nigeria. For instance, the regulatory bodies, MRTB and NUC have committed to the approval of the DPT programme across all institutions in Nigeria. The DPT programme is currently being seen as the acceptable minimum level for entry-level training globally (21). This is because it equips physiotherapists to practice as independent professionals and also puts other elements of professionalism into consideration (21, 27). This upgrade will come with an advancement of the training and the profession within Nigeria. Despite bottlenecks concerning standard facilities, institutions have begun to respond to support the advancement of the physiotherapy profession (22). Concerning the availability and quality of facilities across different institutions for the entry-level physiotherapy degree programme, a study carried out by Balogun (20) to ascertain if the existing physiotherapy programmes in Nigeria have the needed facilities to initiate the entry-level DPT programme, reported that only 29% of the respondents indicated that their institutions had adequate physiotherapy equipment, current access to physiotherapy journals and adequate research facilities. Additionally, some institutions have introduced problem-based learning and simulation-based education as teaching methods to enhance students' problem-solving and critical-thinking skills (17).

PTE in Nigeria has come a long way since its inception in the 1940s. However, there are still challenges to be addressed in order to ensure that the profession is able to meet the changing needs of the healthcare system and provide high-quality care to patients and communities. By addressing issues such as staffing, resources and curriculum development, Nigeria can continue to improve the standard of PTE and produce well-trained professionals who are equipped to tackle the challenges facing the healthcare system.

## COMPARISON OF PTE IN NIGERIA AND OTHER AFRICAN COUNTRIES

The history of PTE in Nigeria can be traced back to 1945 when the profession was established in the country by two British licensed physiotherapists. However, it was not until 1966 that the first BPT degree programme was established in Nigeria at the University of Ibadan, followed by the University of Lagos in 1977 and the Obafemi Awolowo University in the same year. In contrast, South Africa awarded its first BPT degree several decades earlier, in the late 1940s (10). A study by Eni found that Nigeria's PTE has made significant progress in recent years, but has also faced challenges such as a lack of strategic planning, resource allocation disparities, limited opportunities for educational leave and postgraduate degrees, a lack of research focus by lecturers, and curriculum issues (34). In South Africa, these challenges were addressed and the focus has been on implementing degree transition models to improve the quality of PTE (35).

Currently, Nigeria and South Africa are the only countries in Africa offering post-entry-level Masters and doctoral training programmes in physiotherapy. Nigeria has three institutions offering these programmes: the University of Ibadan, the College of Medicine at the University of Lagos and the Obafemi Awolowo University (34). South Africa has four universities offering Master's and academic doctoral degrees in physiotherapy: the University of Cape Town, the University of Free State, the University of Western Cape



and the University of Witwatersrand. In total, there are 26 physiotherapy educational programmes in Anglophone Sub-Saharan Africa, with all others being at the bachelor's level or lower. These programmes are located in countries such as Liberia, Gambia, Sierra Leone, Swaziland, Botswana and Namibia (36).

Studies by Balogun et al. (37) have found that Nigeria is well positioned to build capacity for training the physiotherapy healthcare workforce and support international collaborations and exchanges in the West African Sub-Saharan region. In the Southern African Sub-Saharan region, South Africa plays a key role in building capacity in the physiotherapy healthcare workforce, which can be leveraged for the benefit of the entire continent.

## **STRENGTH OF THE NIGERIAN PTE**

PTE in Nigeria has made significant progress in recent years, with the current goal standard of entry-level PTE being a graduate level, which is in line with the globally recommended standard (38). This is followed by a rigorous clinical training programme, a one-year internship that is practically oriented and supervised by a senior clinician before a graduate can be recognised as an independent physiotherapist (39). As gathered from a recent survey, the internship's impact on physiotherapy-related skill acquisition, professional confidence and ethics, among others, cannot be overemphasised as the training was perceived to be good (40). The internship programme in Nigeria, unlike in other countries such as the Kingdom of Saudi Arabia (41), is independent of the university and is solely supervised and assessed by the clinician, providing ample time for supervision.

The presence of regulatory bodies for PTE and practice in Nigeria is another strength of the profession in the country. Two governmental bodies, MRTB and the NUC, regulate PTE and practice, with the MRTB regulating both education and practice, and the NUC regulating only the academic aspect (33). The presence of these regulatory bodies ensures that the best education is provided to physiotherapy students, and the best possible care is provided to consumers of physiotherapy services (33). In addition, the Nigerian Society of Physiotherapy, a non-governmental physiotherapy association, is consulted by these government regulatory bodies in decision-making about the profession (33).

The faculty-to-programme ratio is a determining factor in the quality of education, as it can determine the number of times lecturers have to supervise students (35). A high lecturer-to-programme ratio in Nigeria, comparable to that of a developed country such as the United States, was reported (42). Although the report only covered university lecturers, and not clinicians supervising students in clinics, it still indicates that quality education is obtained. In addition, a report by Balogun et al. (33) showed that there are sufficient clinicians to supervise students on clinical placements, indicating that there is adequate manpower in physiotherapy training in Nigeria.

In view of the dynamic nature of the physiotherapy profession, the DPT is now considered the minimum acceptable level of graduate education (33). In order to keep up with international education standards, Nigeria's physiotherapy training has now transitioned to the DPT as the entry-level university education. This makes Nigeria one of the few countries to offer the DPT programme globally. Before the approval of the DPT programme, a study was conducted to assess the preparedness of both the university and clinical environment to accommodate the new curriculum in the country. The study found that there were enough clinicians to guide students in the clinics (33), in addition to the previously reported faculty-to-programme ratio (42) and the interest of universities in adopting the programme (35). This suggests that the approval of the DPT programme was timely and safe to implement,

and could bring prestige and respect to the physiotherapy profession (33).

The Nigerian PTE system has also made significant progress in the area of research. According to a study by Balogun et al. (43), Nigerian physiotherapy schools have made notable contributions to the body of knowledge through the publication of research findings in international peer-reviewed journals. This suggests that PTE in Nigeria is not only focused on providing clinical skills but also on developing the research skills of students and faculty. In addition, the study found that Nigerian physiotherapy schools have established collaborations with international physiotherapy schools and institutions, which can help to strengthen the quality of education and research in the country (43).

Another strength of the Nigerian PTE system is the inclusion of interprofessional education (IPE) in the curriculum (44). IPE is an approach to education that focuses on preparing healthcare professionals to work effectively in teams, with an emphasis on collaboration, communication and shared decision-making (45). This is important in today's healthcare system, where healthcare professionals are often required to work in multi-disciplinary teams and communicate with other professionals in order to provide the best possible care for patients. A study by Balogun et al. (43) found that physiotherapy schools in Nigeria have integrated IPE into the curriculum and that students are exposed to interprofessional learning experiences during their clinical placements. This is a positive development, as research has shown that IPE can improve patient outcomes, reduce healthcare costs and enhance the quality of care (46). Overall, it can be seen that the Nigerian PTE system has made significant progress in recent years and has several strengths that can be leveraged to further improve the quality of PTE in the country.

## **CHALLENGES OF PTE IN NIGERIA**

The challenges facing PTE in Nigeria are numerous and varied. Physiotherapy is often described as both an art and a science (43). While the science part of it is provided by the university within the lecture halls, the art part is only obtainable in the clinic when the students are on clinical placement. It is in this setting that a physiotherapy student interacts with patients and applies the sciences learned in class. Despite the adequate number of the clinician supervising the physiotherapy students during the clinical placement (33), it was noted that the clinical exposure obtained by new physiotherapy graduates was not enough to make the student an independent clinician, hence an additional one-year clinical internship was introduced to bridge this gap (47). During this period, interns are expected to work under the supervision of senior colleagues. However, the internship has its own challenges, such as interns being allowed to work unsupervised and reports of mistreatment during the internship period (48, 49). Consequently, these may lead to the acquisition of the wrong skills and poor clinical practice among future physiotherapists (48). Another challenge is the need for proper equipment in training institutions, which hinders the practical aspect of PTE (33).

There is also a lack of cooperation between physiotherapy practitioners and academics in Nigeria, as evidenced by discrepancies between what is taught in classrooms and what is taught in healthcare settings. A study conducted in South Africa established that there were inconsistencies between what was being taught in the classrooms by the lecturers and what was being taught in the healthcare setting by the clinicians (33). This lack of cooperation can lead to a lack of uniformity in curricula and norms and can hinder the imparting of clinical skills to students during their clinical education. In addition, there is a lack of proper training for clinical instructors and clinicians on learning outcomes for student clinical education (50, 2).

There are also challenges related to the lack of incorporation of certain subjects, such as microbiology and epidemiology, into the recent DPT physiotherapy curriculum (33, 49). This can hinder the understanding of diseases and their treatment. In comparison to fellow low-middle-income countries, such as India (51), some significant courses do not exist in the Nigerian curriculum.

Evidence-based treatment involves utilising the best quality research in the clinical treatment of patients by an expert (52). Therefore, research findings are expected to shape and tailor the treatment regimens of patients for better outcomes (53). However, translational research in Nigeria is not in practice, and therefore, the Physiotherapy student may learn the traditional way of managing patients that are based on anecdotal evidence unlike their counterparts trained in other countries such as China (54).

Research is the path on which sciences and evidence are established. Furthermore, the quality of research conducted by physiotherapy students is often poor, with significant methodological flaws (55). In addition, when asked about their research experiences, interns reported a lack of guidance and supervision from their research supervisors (56). This confirmed that Nigerian physiotherapy students underutilised research in comparison to their other peers in medical school (57). There is also a lack of access to research facilities and resources, as well as a lack of research culture among physiotherapy students (43). Finally, there is a lack of adequate funding for PTE in Nigeria, leading to a lack of resources and poor infrastructure in training institutions (17, 43).

## Recommendations

As noted by Akinpelu et al. (48), internships as continued training of physiotherapy graduates should have structured guidelines by the regulatory body MRTB in collaboration with Nigerian Society of Physiotherapy. Therefore, to address the challenges of inadequate clinical exposure and mistreatment during the clinical internship programme, it is recommended that the internship programme be restructured to include more supervised clinical hours and to ensure that interns are treated with respect and professionalism. Additionally, training institutions should be provided with adequate resources, including physiotherapeutic equipment, to facilitate the learning process for students.

To address the issue of the lack of cooperation between physiotherapy practitioners and physiotherapy educators, it is recommended that regular meetings and workshops be organised to bring both groups together to discuss and address any issues or concerns. It is also important to establish clear communication channels between the two groups to facilitate better collaboration and cooperation. In addition, it is recommended that physiotherapy educators receive training on the learning outcomes and expectations for clinical education to ensure that they are able to effectively guide and support the clinical instructors in their role (58).

To ensure that research findings are translated into clinical practice, and to produce graduates with first-hand evidence, there is a need for collaboration between academicians and clinicians both in conducting research and implementing the findings. Likewise, collaboration with training institutions in developed countries will go a long way in increasing the standard of PTE in Nigeria (59). As the physiotherapy profession and education are changing constantly, the development of sustainable and standardised models of entry-level clinical education for Nigerian students should be intensified (25). Additionally, it is important to ensure that the curriculum is updated regularly to reflect the latest evidence and best practices in physiotherapy.



## CONCLUSION

In conclusion, PTE in Nigeria has come a long way from its humble beginnings in 1945. It has evolved from a three-year diploma programme to a five-year entry-level professional degree programme and more recently, a Doctor of Physical Therapy degree programme. The development of postgraduate programmes in Nigeria and South Africa has also contributed to the advancement of the profession on the continent. However, there are several challenges that need to be addressed in order to improve the quality of PTE in Nigeria. These challenges include insufficient clinical exposure and supervision during the internship programme, a lack of cooperation between clinicians and physiotherapy educators, a lack of integration of basic sciences and clinical courses in the curriculum, and a lack of emphasis on research and evidence-based practice.

To address these challenges, there needs to be a concerted effort by all stakeholders to improve the quality of PTE in Nigeria. This can be achieved by increasing the number of clinical hours during the internship programme, fostering a collaborative relationship between clinicians and physiotherapy educators, and promoting research and evidence-based practice. Additionally, it would be beneficial to invest in the development of better-equipped training institutions and to provide ongoing professional development opportunities for physiotherapy educators. By addressing these challenges, the physiotherapy profession in Nigeria will be better positioned to meet the health needs of the population and contribute to the achievement of the United Nations Sustainable Development Goal 3.

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