## Research

# Neuro-Physiotherapy at the Primary Health Care Level: Perception of Public Health Physicians

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#### **Abstract**

**Background:** There is consistent increase in chronic neurological conditions presenting at primary health care settings across the world. However, there is paucity of neuro-physiotherapy services and research on integrating neuro-physiotherapy to promote independence among this population at primary health care settings. This study determined the perception of public health physicians on the integration of neuro-physiotherapy at the primary health care (PHC) level in Nigeria.

**Methods:** A descriptive cross-sectional survey using a validated and pre-tested questionnaire to retrieve data from 149 Public Health Physicians in Nigeria to determine their perception of neuro-physiotherapy at the primary health care level. **Results:** Majority of the participants 133 (89.3%) agreed to the need for neuro-rehabilitation care at primary health care level. 83 (55.7%) believed that the physiotherapists are competent enough to handle neuro-rehabilitation needs at the PHC level. The findings highlighted the challenges towards implementing neuro-rehabilitation at the primary health care level. **Conclusion:** The results revealed positive recommendations from public heath physicians in Nigeria towards the integration of neuro-physiotherapy services in primary health care.

Keywords: Neuro-Physiotherapy, Primary Health Care, Public Health Physicians, Perception

## Introduction

One of the fundamental human rights is access to essential health care services. The World Health Organization (WHO) affirmed in 1978 that people across all countries of the world must have access to essential care especially at the primary health care (PHC) level.1 One primary reason for ensuring that essential health care services are accessible at PHC settings is that the PHC is the first point of contact for most people who are sick, and it is the backbone of health care policies in most countries of the world.<sup>1,2</sup> According to Soever,3 PHC is an approach to health care that is inclusive of every service that plays a significant role in an individual's health and wellness. The responsibilities of PHC are extensive as it ranges from the provision of preventive to curative and rehabilitative services. Specifically, PHC adopts both primary and secondary prevention of chronic disease states, wellness, personal support, and education. It also addresses the personal

health care needs of patients within the family and community. Therefore, PHC models are effective strategies and approaches that provide access to all needed care by the patients to ensure their wellness.4 Although care at the primary level has been beneficial, certain conditions causing long term disabilities have not gained the focus of primary care globally. 4,5 Patients with chronic diseases mostly experiences functional limitations, with significant disabilities such as inability to walk without being assisted by a caregiver or assistive equipment, failure to perform self-care, communicate, or to participate in educational or economic activities, which makes the need for them to have access to primary and coordinated care becomes inevitable and necessary.4-7

People with various disabilities and chronic diseases often experience inequity when accessing PHC services,<sup>4</sup> mostly resulting from inaccessibility of specialty health services and necessary assistive equipment required for

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their wellbeing. <sup>4,6</sup> There are over one billion people with disabilities globally and this figure equates up to 15% of the world population or one in seven people according to 2010 global population estimates. <sup>7</sup> This prevalence of disability is escalating at an alarming rate, which may be partly due to disasters, natural or human-made, and rising rates of the ageing population in countries of the world. Also, a rise in chronic conditions (including Non-Communicable Diseases, (NCDs) such as cardiovascular diseases and diabetes) amongst other factors <sup>4</sup> is equally responsible for this trend.

The term "neuro-physiotherapy" sometimes known as "neurological physiotherapy," refers to a form of rehabilitation for the physical and functional problems caused by neurological diseases such brain injury. The neuro-physiotherapist is the professional who provides this kind of specialist service. A patient's overall quality of life and functional independence may be negatively impacted by motor

dysfunctions, incorporating reduced mobility, difficulties completing normal tasks, falls, pain, and anxiety or despair. In these situations, intensive neurophysiotherapy is crucial for avoiding and treating motor dysfunction and its consequences as well as enhancing functional independence.<sup>9</sup> A recent study revealed how neuro-physiotherapy rehabilitation helps improve motor function and functional independence in patients with hemiplegia following brain tumor excision. The study resulted in the conclusion that physiotherapy treatment that is tailored to a patient's needs is essential for enhancing quality of life, delaying the deterioration of symptoms, and extending the life of a patient.<sup>10</sup>

Neuro-physiotherapy incorporates integrative approaches with a therapeutic routine that is goal-oriented and includes neurodevelopmental treatment principles, passive stretching, weight-bearing exercises, and task-oriented techniques. These approaches improve gross motor functions, static and dynamic balance, reduction in the spasticity, improved muscle tone, independent walking as well as good trunk and pelvic control.<sup>11</sup> Abhishek reported that when patients are referred by primary care physicians to neuro-physiotherapists who are specialized in neurophysiotherapy techniques, there is always positive outcome towards quality care, reduction in patients' waiting time and improved primary care efficiency.<sup>12</sup> Thus, the need for a collaborative approach to health becomes inevitable which includes the assessment and treatment of chronic diseases;12,13 and also, the integration of long term management plan at the

community level towards improving patients' functional capacities.

There has been a specific focus on the need to integrate healthcare specialist providing neurorehabilitation into the PHC teams in countries of the world; and with the rate of chronic and non-communicable diseases increasing by 13.7% in the past 10 years,<sup>7,14</sup> the need for this integration has become imperative, particularly within the rural areas.¹ A situational analysis conducted in South Africa concluded that rehabilitation services in South African PHC settings in Gauteng and Limpopo Provinces are neither developed nor accessible to the majority of the population, especially people who live in rural areas.¹5,16 The limited access to these services has adversely affected the effective discharge of health care services in PHC settings; thus, making the need for rehabilitation services imperative.

Rehabilitation including neurorehabilitation promotes physical fitness, prevention of injury, disabilities and diseases, and management of acute and chronic health conditions and limitations. It also includes rehabilitation of the effects of injuries, disabilities, and diseases through therapeutic exercise programs and health education; and provision of community awareness on the prevention of disease; and involvement in activities that support health and wellness.<sup>1,5,9,13</sup>

Establishing and integrating rehabilitation services within primary healthcare settings would yield positive outcomes, 16,18 including lesser waiting time and traveling time, which increases access to such services and increasing satisfaction amongst patients. 1,5,9,10,16,17 A collaborative inter-professional PHC team with the integration of rehabilitation services such as neurophysiotherapy will provide support strategies towards disease prevention, person-centered care, and specialized treatment. 11,13 Canada PHC teams was a unanimous sentiment particularly in terms of musculoskeletal health, chronic disease management and maximizing health human resources efficiency to ensure the right care, is delivered by the right practitioner, at the right time.

The availability and integration of rehabilitation skills and resources in PHC settings, depends on institutional support including the government.<sup>5,16,19</sup> Also, in a study by Dufour et al.<sup>20</sup> it was reported that although there are barriers to implementation such as efficiently maximizing health human resource, such integration is essential especially for chronic disease management. Although healthcare workers providing rehabilitation services are thoroughly trained, it appears they have been



grossly under-utilized with little or no input within the primary care system, 1,17,20 despite the relevance of neurorehabilitation in improving patient outcomes especially in patients with chronic condition and possibility of functional disabilities. 21

Akenah¹ attributed the lack of understanding and proper awareness of the roles of physiotherapy in PHC settings by other health care professionals and policymakers as the factors that often lead to the absence of rehabilitation providers as members of the multidisciplinary team (MDT) in the PHC settings. He also ascribed this as the cause of the under-utilization of their services in Nigeria at large. In addition, Jejelaye et al. <sup>5</sup> identified lack of policy implementation, inadequate resources, low staffing, and insufficient knowledge about the roles of therapists by the existing professions at the primary health care, as barriers to the integration of therapeutic services at the primary health care level.

It has been revealed that there are few available studies on the perception of other health practitioners on integrating neuro-rehabilitation in PHC settings. The study also acknowledged the lack of implementation of recommendations from previous studies on the integration of neuro-physiotherapy at the PHC level in Nigeria, which could be implied from limited sample size and population that informed such findings and conclusions. In the light of these, the study aimed to broaden scope of this subject by examining the perception of public health physicians on the integration of neuro-physiotherapy at the primary health care (PHC) level in Nigeria.

#### Methods

A cross sectional survey was carried out using a selfadministered questionnaire constructed by the authors using items identified based on relevant literatures.<sup>22,23</sup> The questionnaire consisted of five sections. The first section asked for demographic and professional profile information such as professional designation and years of experience. The second section was composed of 5 Likert-like items designed to obtain participants perceptions on providing neuro-rehabilitation services in PHC. The third section addressed questions relating to the possible challenges to providing neurorehabilitation services at the PHC level. The fourth section consisted of medical conditions that require topmost attention for neuro-rehabilitation at the PHC level. The fifth section consisted of questions asking for personal opinions about the potential advantages of implementing physical therapy services.

A preliminary version of the questionnaire was given to a sample of four non-participating Public Health Physicians to review it as a pilot. A test-retest validation was done with a level of agreement of recommendations at p<0.05. The finalized questionnaire was distributed during the 2018 annual general meeting and scientific conference of public health physicians in Nigeria. A follow up email containing a link to an online version of the questionnaire was also sent to all participants present to enable the members of the conference who could not fill during the conference to fill through the online platform. There was an added information that those who have filled during the conference should not fill again through the online platform. An introductory summary was attached with the questionnaire highlighting the purpose, rationale of the study and guidance on how to complete the questionnaire. The targeted participants included only 149 medical doctors with a postgraduate degree in public health or a medical doctor who was undergoing clinical residency program in community medicine. 34 Participants of the conference without a medical degree were excluded from the study.

The data retrieved from the conference and those collected online through Google sheet were imputed and analyzed using the Statistical Package for Social Sciences (SPSS) version 23. The results were summarized as percentages in a frequency table. Peer examination of the data and the analysis was undertaken by the second author. Ethical approval for this study was obtained from the University of Nigeria Review and Ethical Committee and informed consent forms were signed by the participants.

## Results

The Socio-demographic characteristics of participants are shown in Table 1. The average age of the participants was 42 years, with an average of 15 years of work experience. The sex distribution was evenly distributed – males (53.0%) and females (47.9%). Most participants were married (83.9%), with 14.1% single and 2.1% divorced/widowed. 96 (64.4%) responded to the questionnaire during the conference while fifty-three (35.6%) responded to the alternative online survey. 51 (34.2%) of the Public Health Physicians (PHP) were consultants in the field, 56 (37.6%) were general practitioners with a postgraduate degree in public health, and 42 (28.2%) are currently undergoing a residency program in community medicine. Lastly, the majority 123 (82.6%) of the participants had between 1 and 20 years of experience.



Table 1: Socio-demographic data of the

Variables		Freq	Percent
		(n=149)	(%)
Age Group	25-30	07	4.7
	31-40	67	45
	41-50	46	30.9
	Above 50	29	19.5
Means of	Conference	96	64.4
Entry	Online	53	35.6
	survey		
Gender	Male	79	53.0
	Female	70	47.0
Marital	Single	21	14.1
Status	Married	125	83.9
	Others	3	2.1
Professional	Medical	56	37.6
Designation	Doctor		
	Registrar	21	14.1
	Senior	21	14.1
	Registrar		
	Consultant	51	34.2
Years of	1-10	60	40.3
experience	11-20	63	42.3
_	21-30	12	8.1
	31-40	14	9.4

participants

A total of 133 (89.3%) PHP in Nigeria agreed to the need for neuro-rehabilitation care at PHC level. Their perception of integrating neurorehabilitation at the PHC and their perceptions on the health personnel to be equipped and responsible for implementing neuro-rehabilitation at the PHC are shown in Table 2. The majority 108 (72.5%) of the participants believed that Physiotherapists are competent enough to handle neuro-rehabilitation needs at the PHC level, most 136 (91.3%) of which also mentioned that neuro-rehabilitation should be included in the clinical residency training for community health physicians. However, on the average, 79 (53%) of the respondents suggested that the inclusion of basic disability management techniques in the standing orders for primary health care is sufficient.

Table 2: Perception of PHP on integration of neurorehabilitation at PHC level

Variables	Frequency: n=149; (Percentage: 100%)	
	Agree	
Neuro-rehabilitation	133 (89.3)	
care is necessary at PHC		
level in Nigeria		
Physiotherapists are	108 (72.5)	41 (27.5)
competent to manage		
patients with neuro-		
rehabilitation needs at		
the PHC level	00 (55 5)	<< < 44 a>
Physiotherapists should	83 (55.7)	66 (44.3)
be in charge of neuro-		
rehabilitation at the PHC		
level Basic disability	70 (52.0)	70 (47 0)
	79 (53.0)	70 (47.0)
management techniques		
included in the standing orders for PHC workers		
is sufficient		
Neuro-rehabilitation	136 (91.3)	13 (8.7)
should be a part of	150 (71.5)	13 (6.7)
clinical residency training		
of Community Health		
Physicians		

Participants agreed that neuro-rehabilitation care in PHC has several benefits, including easy geographical access to care for patients in suburban areas 143 (96%) and early detection and management of physical dysfunction. The majority 143 (96%) of the participants also agreed that neuro-rehabilitation in PHC would accelerate community re-integration and socialization of patients. Other advantages of the integration of neuro-rehabilitation in PHC are highlighted in Table 3.

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Table 3: Perceived benefit of neuro-rehabilitation at PHC level

Variables	Frequency: n=149; (Percentage: 100%)	
	Agree	Disagree
Consultative support to physicians at secondary and tertiary levels of care for decision making on the patient's long term care	125 (83.9)	24 (16.1)
Easy geographical access to care for patients in suburban areas	143 (96.0)	06 (4.0)
More employment opportunities for health personnel	129 (86.6)	20 (13.4)
Reduction in patient load and waiting time at tertiary hospitals	141 (94.6)	08 (5.4)
Early detection and management of physical dysfunction	142 (95.3)	07 (4.7)
Reduction in the onset of complications of the predisposing disease conditions and transformation into chronic disorders	136 (91.3)	13 (8.7)
Expansion in the scope and awareness of neuro-rehabilitation in Nigeria	138 (92.6)	11 (7.4)
Reduction in indiscriminate consumption of medication by patients	111 (74.5)	38 (25.5)
Advancement of public health education programs on well-being through physical activity	133 (89.3)	16 (10.7)
Encouragement of group rehabilitation, motivation and social support	140 (94.0)	9 (6.0)
Improved inter-professional relationships and quality of care	125 (83.9)	24 (16.1)
Increase in patients' satisfaction and improved treatment outcomes	137 (91.9)	12 (8.1)
Accelerated community reintegration and socialization of patients	143 (96.0)	06 (4.0)
Reduction in the cost of health care delivery for patients	133 (89.3)	16 (10.7)

The participants identified a lack of adequate equipment 141 (94.6%) and inadequate healthcare financing 140 (94.0%) as limiting factors to implementing neurorehabilitation at the PHC. Other factors identified are represented in Table 4.

Table 4: Challenges to implementation of neurorehabilitation at PHC level

Variables	Frequency:	n=149;
	(Percentage: 100%)	
	Agree	Disagree
Lack of Political will	139 (93.3)	10 (6.7)
No provisions in the National	138 (92.6)	11 (7.4)
Health Policy		
Poor health care financing	140 (94.0)	09 (6.0)
Human resource deficit	136 (91.3)	13 (8.7)
Unionism within the health	101 (67.8)	48 (32.2)
sector	. ,	. ,
Lack of adequate equipment	141 (94.6)	08 (5.4)

Table 5 presented the participants' level of agreement on the conditions that should be given priority for neuro-rehabilitation at the PHC level. Poliomyelitis 132 (88.6%), Epilepsy 128 (85.9%), and Stroke 126 (85.6%) were identified, among others.

Table 5: Conditions of high priority for neurorehabilitation at PHC level

Variables	Frequency	n=149;
	(Percentage: 100%)	
	Agree	Disagree
Epilepsy	128 (85.9)	21 (14.1)
Stroke	126 (85.6)	23 (15.4)
Traumatic Brain Injury	87 (58.4)	62 (41.6)
Spinal Cord Injury	83 (55.7)	66 (44.3)
Poliomyelitis	132 (88.6)	17 (11.4)
Cerebral Palsy	119 (79.9)	30 (20.1)

## Discussion

Our study presents a unique stance on how primary health physician (PHP) perceive the integration of neuro-physiotherapy at PHC settings in Nigeria. The majority of the study participants have a positive perception to the need for neuro-physiotherapy at this level of care. This finding is in agreement with the findings of similar studies conducted in Nigeria and other parts of the world.1,9,20 Dufour et al.20 in Canada explored the views of nurses and family physicians on integrating physiotherapists within the interdisciplinary PHC teams. The participants strongly embraced the services of physiotherapists with the PHC setting. Similarly, Akeneh's1 study on the awareness and perceptions of other healthcare professionals on the integration of physiotherapy at the PHC setting in Nigeria indicated that these healthcare professionals are receptive to the integration of physiotherapists into PHC. It was reported that the integration will allow

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physiotherapists to render their essential services to manage musculoskeletal disorders at this level of care. studies1,20 Furthermore, both recommended musculoskeletal health as the most crucial domain for physiotherapists in PHC. The recommendation of musculoskeletal health as paramount could be explained based on the categories of patients they frequently manage because neuro-physiotherapy has been reported in other studies. A study in South Africa by Maleka et al. <sup>15</sup> to determine the physiotherapy services required at the PHC settings in urban and rural provinces of the country also reported a high prevalence of neurological conditions, justifying the need for neuro-physiotherapists at PHC. Similarly, Dufour et al. $^{20}$ equally reported that physiotherapists would be invaluable members of primary care teams in Ontario, in musculoskeletal especially and conditions/neurorehabilitation. They underscored physiotherapists' availability within the teams as having the appropriate interventions provided by the appropriate professional. More so, Khan et al.6 while investigating the barriers and potential solutions relating to neurorehabilitation in developing countries, reported that in reference to the WHO Disability Action Plan (DAP), neurorehabilitation should be delivered through an inter-sectoral and interdisciplinary approach involving the patients, their families, their communities, and the relevant professions such as rehabilitation physicians, physiotherapists, occupational therapists, nurses, speech and language pathologists, and other support workers.

Considering the choice of health personnel who should be equipped to implement neuro-rehabilitation at the PHC level, the results of this study indicated that despite the positive perception among the public health Physicians about the competence of physiotherapists for this role, nearly all (91.3%) the participants believed that the physicians should implement neurorehabilitation instead of Physiotherapists. It is believed neurorehabilitation should be incorporated into the clinical residency training for Physicians. Nonetheless, physiotherapists' competence to provide quality services across various specialties at PHC has been well researched.<sup>6,10,20</sup> Haripal et al.<sup>11</sup> while considering the effect of neuro-physiotherapy on gross muscle function, highlighted that such role requires specialized skills and approaches such as understanding neurodevelopmental treatment principles, passive stretching, task oriented techniques which are essentially the basics of the physiotherapy curriculum. Such roles improve gross muscle functions and balance as well as promoting

health and wellness among the population in cognizance of the rising chronic and non-communicable disorders.

McColl et al. 4 in her study on the strategies that could be employed to support the integration of rehabilitation professions into PHC suggested that the issue of leadership for the services rendered at PHC should be carefully negotiated between physicians rehabilitation professionals because physicians will naturally expect that any services rendered by other professionals are subject to their leadership. In contrast, rehabilitation professionals, on the other hand, will expect to exercise autonomy as equal partners in delivering rehabilitation services. Ganiyu 17 had equally identified a lack of autonomy for physiotherapists as a challenge to integrating physiotherapy into PHC settings. Therefore, this result may be at variance to the literature advocating for the right professionals to render the right and required services for patients at PHC.<sup>13, 20</sup> It is essential that the leadership and autonomy problems in emerging teams should be addressed at the health systems and individual levels in order for it not to become an insurmountable barrier for the integration of rehabilitation services at the PHC level in Nigeria.

Many of the participants also believed that the availability of necessary disability management procedures incorporated in the regular PHC services is adequate for clients' required neurorehabilitation needs. Even if self-management for chronic neurological conditions is advocated, the physiotherapists' input is still required to implement such technique effectively. The view that standard procedures alone are sufficient may stem from the belief that anyone without specialist training should be capable of mitigating the effects of neurological dysfunction and the over-dependence on physicians' medical model. A recent study in South Africa on the integration of occupational therapy services at PHC has equally proposed a cordial relationship between community health workers (CHWs) and rehabilitation professionals to ensure that broader vulnerable populations are covered. The study also suggested that the CHWs are trained to make an early referral for rehabilitation services.<sup>5</sup> However, without the neurorehabilitation professions being present at the PHC to coordinate the CHWs, the lack of access of the vulnerable population to rehabilitation services may be reinforced, thus precluding them from the benefits of having neuro-physiotherapy at the PHC

On the one hand, the participants indicated several merits associated with the integration of neuro-

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physiotherapy at PHC. Firstly, increased access to neurorehabilitation by vulnerable populations is a significant advantage identified by the participants due to the nearness of PHC to the people compared to the higher levels of care, which is largely supported by studies.1,9,17 Additionally, integrating neurorehabilitation was identified as a precursor to the early detection and management of physical disabilities and reduced the onset of complications of the predisposing disease conditions. This early detection is supported by different authors.<sup>11,13</sup> Finally, they believe that the rate of group rehabilitation, motivation, social support, community re-integration, and socialization among service users exposed to neuro-physiotherapy will increase.<sup>1,5</sup> The other merits identified include encouragement of reduction in patient load and waiting time at higher levels of care - secondary and tertiary, expansion in the scope and awareness of neurorehabilitation in Nigeria, and increased patient satisfaction and improved treatment outcomes. These findings are consistent with previous studies investigating the advantages of integrating rehabilitation services at the PHC level.<sup>1,5</sup>

On the other hand, despite the numerous benefits of integrating neurorehabilitation at the PHC level, several barriers were also identified. They include a dearth of adequate equipment and other resources, including human and financial. These limitations seem to be globally relevant to rehabilitation service provision at PHC.4,5 As many of the policymakers and existing healthcare professionals at the PHC level become aware and knowledgeable about the roles of rehabilitation professionals such as neurophysiotherapists, they will serve as advocates in addition to rehabilitation professionals themselves in bringing about the integration of these services at the PHC level.<sup>1,5,24</sup> The ultimate effort of physiotherapists and other rehabilitation professionals is to advocate for health policies backing their services at PHC vigorously. The National Health Insurance Bill is a significant avenue to achieve this policy backing. Once policy backing is present, implementing these policies can then be advocated to mitigate the identified barriers to integration.

The other identified barriers include the paucity of provisions for neurorehabilitation in the National Health Policy document of Nigeria and poor political will to drive such initiatives. Jejelaye et al.<sup>5</sup> equally indicated the underrepresentation of rehabilitation professions in developing countries' major health policies. Even when these policies exist, they are poorly implemented. This may suggest a disconnection between

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the top-level policy-making bodies and the ground-level policy implementation managers. In cognizance of the WHO's call for Universal Health Coverage through a comprehensive PHC involving rehabilitation services, there is an urgent need to review the Nigerian Health Policy and the way rehabilitation services are provided. This review will lead to the decongestion of the higher levels of care and increase access to neurorehabilitation services to Nigeria's vulnerable population.

Although Ganiyu [2008] indicated a lack of educational preparation for the PHC setting existed among physiotherapists a decade ago, it is no longer the case as many physiotherapists and other rehabilitation professionals are now adequately educated on service provision in PHC. One example of this purposive undergraduate training is the model employed in physiotherapists' training at the University of the Kwazulu Natal in South Africa which exposes students to immersive community-based training in the latter years of their study.<sup>25</sup>

Finally, this study's findings indicated that the conditions such as poliomyelitis, epilepsy, stroke, and cerebral palsy should be the primary focus of neuro-physiotherapy at PHC. Conditions like Spinal Cord Injury and Traumatic Brain Injury were perceived as not being paramount for neurorehabilitation at this level of care. This perception may be due to the required length of admission for the latter conditions, or the specialist care they require, which neuro-physiotherapists at PHC may not be able to address due to paucity of resources and necessitate referral to higher levels of care adequately.

# Limitations of the study

The study acknowledged that the sample size which is a result of stringent selection criteria, and the limited population group could be responsible for the outcome of the study, as it does not capture the views of other relevant stakeholders. Future considerations of other stakeholders within the primary care including patients would give another useful perspective.

Authors' contribution: Design of the study: TD and AJ; data collection: TD; data analysis: TD; interpretation of data: TD, AJ, AA; Manuscript writing: TD, AA, AJ; Revision: TD, AJ. The authors read and approved the final manuscript.

Ethical consideration: Ethical approval was given, and every respondent gave consent to participate in the study.

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Conflict of interests: All authors declare no conflict of interests



## Conclusion

Public Heath Physicians in Nigeria expressed strong positivity towards the integration of neuro-physiotherapy services in primary health care. However, certain barriers like lack of political will and poor healthcare financing were identified as factors that could affect the successful implementation of this practice.

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