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Research Article

The Imperative of Scaling up Access to Physiotherapy Services for Cases of Acute Flaccid Paralysis in Nigeria

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Abstract:

Background:

Nigeria, a country of about 200 million people is one of the three polio-endemic countries in the world. The last case of WPV and cVDPV2 had onset of paralysis on 21st August 2016 and 28th October 2016 respectively. Surveillance for cases of Acute Flaccid Paralysis (AFP) is one of the four strategies designed to eradicate polio. AFP surveillance is a syndromic reporting strategy in which all cases of sudden weakness/paralysis of the limbs of children less than 15 years of age or in anyone in whom a clinician suspects polio disease are reported and investigated rather than just reporting 'suspected cases of poliomyelitis'. Polio is only one out of the many causes of AFP. AFP is thus a complex clinical syndrome with a broad array of potential etiologies. AFP surveillance in Nigeria is sensitive and an average of 12,000 AFP cases have been reported annually in the last five years.

Physiotherapists provide evaluations, treatment and rehabilitation to individuals with physical disability including AFP cases. Physiotherapy management primarily focuses on movement, reduction of pain, preserving, developing and restoration of physical function, and prevention of disability. Despite ample evidence of effectiveness of Physiotherapy in the management of AFP cases, many of such cases continue to live with physical disabilities in most communities in Nigeria due to poor knowledge and access to such services. In order to reduce long term complications, timely access to physical therapy is advocated for all AFP cases to enable them participate fully in school life and contribute to other socio-economic development of their communities.

Objectives:

The objective of this study is to determine whether there is adequate access to Physiotherapy services for AFP cases; and also to identify major barriers to obtaining optimal Physiotherapy services in Nigeria.

Methods:

We conducted a retrospective review of reported AFP cases in Nigeria in 2016 from the AFP database at the World Health Organization Country Office. We also obtained the distribution of health facilities that provide Physiotherapy services and institutions that train Physiotherapists in the country from the Medical Rehabilitation Therapists (Registration) Board of Nigeria. We conducted analysis of the data to identify any skewing of the distribution of Physiotherapy centres and Physiotherapy training institutions in the various geopolitical zones as this relates to the burden of reported AFP cases. We also conducted literature search on the role of Physiotherapy in the management of physical disability including cases of AFP.

Results:

A total of 17,840 AFP cases were detected in the country in 2016. Although there is variation in the number of AFP cases reported by geopolitical zones of the country, most of the AFP cases were reported by the three northern zones. The number of Physiotherapy centres in the country as at 2016 was 143. There was a marked skewing in the distribution of physiotherapy centres in the country (Table1). The mal-distribution of physiotherapy centres is at the disadvantage of the northern zones of the country that reported most of the AFP cases.

Conclusion:

There was poor access to physiotherapy services for cases of Acute Flaccid Paralysis in Nigeria. Although the number of Physiotherapy centres and training institutions was generally inadequate in the country, more of such centres and training institutions were located in the southern geopolitical zones of the country at the disadvantage of northern zones that reported most of the AFP cases.

Timely provision of access to physiotherapy services to AFP cases will go a long way to reducing long term complications as well as enable AFP cases participate fully in school life and contribute to other socio-economic development of their communities.

Keywords: Physiotherapy, Acute Flaccid Paralysis, Access, Disability, Rehabilitation

Introduction

Since its launch at the World Health Assembly (WHA) in 1988, the Global Polio Eradication Initiative (GPEI) has reduced the global incidence of Wild Poliovirus (WPV) by more than 99% and the number of countries with endemic polio from 125 to 3, Nigeria inclusive[1]. More than 10 million people are walking today who otherwise would have been paralyzed if not for GPEI efforts[2]. In May 2012, the WHA declared ending polio a "programmatic emergency for global public health" and this declaration was last reiterated in August 2017[3]. The Polio Eradication and Endgame Strategic Plan 2013-2018 was developed not only to end all polio (Wild and circulating Vaccine Derived Poliovirus, cVDPV) disease, but also to use polio structures to deliver other health services in a more sustainable way[4].

Nigeria is a country of about 200 million people and the last case of WPV and cVDPV2 had onset of paralysis on 21st August 2016 and 28th October 2016 respectively[5].Surveillance for cases of Acute Flaccid Paralysis (AFP) is one of the four strategies designed to eradicate polio[6]. The hallmark of polio disease is the causation of irreversible paralysis leading to life-long disability, handicap and therefore lends itself to detection for as long as the victim is alive[7].

AFP surveillance is a syndromic reporting strategy in which all cases of sudden weakness/paralysis of the limbs of children less than 15 years of age or in anyone in whom a clinician suspects polio disease are reported and investigated rather than just reporting 'suspected cases of poliomyelitis'[8,9]. Polio is only one out of the many causes of AFP. AFP is thus a complex clinical syndrome with a broad array of potential etiologies. AFP surveillance in Nigeria is sensitive and an average of 12,000 AFP cases have been reported annually in the last five years[10].

Physiotherapists are increasingly having important role to play in health care as population ages and as diseases and other health events with physical disability outcomes become more prevalent[11].

Despite ample evidence of effectiveness of Physiotherapy in the management of AFP cases, many of such cases continue to live with physical disabilities in most communities in Nigeria due to poor knowledge and access to such services[12].

Methods

Study area and population

Nigeria is located in West Africa. The country has a total population of close to 200 million and is sub-divided into 36 states and the Federal Capital Territory, where the capital, Abuja is located. It is bordered by Republic of Benin to the west, Chad and Cameroon to the east and Niger Republic to the north. Its coast in the south lies on the Gulf of Guinea in the Atlantic Ocean.

Brief description of the evolution of physiotherapy services in Nigeria

Physiotherapists otherwise called Physical Therapists are a set of medical professionals that provide evaluations, treatment and rehabilitation to individuals that primarily focuses on movement, reduction of pain, preserving, developing and restoration of physical function, and prevention of disability[13].The origin of formal Physiotherapy training in Nigeria can be traced to 1945 when assistant physiotherapy cadre training was initiated by two British chartered physiotherapists in the National Orthopaedic Hospital, Igbobi, Lagos. This training programme at Igbobi eventually gave way to a Bachelor of Science (B.Sc.) degree in Physiotherapy at the University of Ibadan in 1966. The first set of British-trained Nigerian Physiotherapists returned to the country between 1958 and 1959[14].

Of the close to 150 universities in Nigeria, only 9 currently offer entry Bachelor of Science (B.Sc.) and professional Bachelor of Physiotherapy (BPT) training programs and another 3 in various stages of takeoff. Starting from 2013, the Nigeria Society of Physiotherapy (NSP) constituted a high powered Committee that worked tirelessly to get a curriculum of Doctor of Physiotherapy (DPT) approved by the National University Commission. Today, Doctor of Philosophy (Ph.D.) degrees in Physiotherapy is deemed possible in 7 of the 9 universities offering professional Bachelor of Physiotherapy courses.

All the Physiotherapy centres in the country are located in major health facilities (teaching and general hospitals) in big and major urban cities. There is no provision of Physiotherapy services in the primary health care services. A referral letter from a doctor or a specialist to the Physiotherapy department is usually required in order for patients to access Physiotherapy services.

Data collection and analysis

We conducted a retrospective review of reported AFP cases in Nigeria in 2016 from the AFP database at the World Health Organization Country Office. We disaggregated the data by states and zones to identify areas with highest AFP burden. We also obtained the distribution of health facilities that provide Physiotherapy services and universities providing Physiotherapy training programmes in the country from the Medical Rehabilitation Therapists (Registration) Board of Nigeria. We conducted analysis of the data to identify any skewing in the distribution of physiotherapy services and training centres as this relates to the burden of reported AFP cases. We also conducted literature search on the role of Physiotherapy in the management of physical disability including cases of AFP with key search words built around the themes of Physiotherapy in Nigeria, Physical Therapy and AFP cases and rehabilitation of AFP cases. Only papers published in English were considered in the review. The review was conducted between July and October 2017.

Results

The total number of AFP cases detected in 2016 was 17,840. This number of AFP cases was much more than the minimum expectation of less than 1,000 required (based on the population of <15 years of 91, 317,339 at the rate of 2 non-polio AFP cases per 100, of < 15 years population) by the World Health Organization (WHO) as shown in table 1.

Table 1: Distribution of physiotherapy centres and reported AFP cases by states and zones in Nigeria (2016)

Zone	State	Population of <15 years	Physiotherapy Centres	AFP Cases in 2016 No(%)
Southeast Zone	Abia	1,760,804	2(1.4)	218(1.2)
	Anambra	2,623,768	2(1.4)	240(1.3)
	Ebonyi	1,363,634	3(2.1)	229(1.3)
	Enugu	2,083,707	4(2.8)	334(1.9)
	Imo	2,566,478	2(1.4)	279(1.6)
	Zonal Sub-total	**10,398,392**	**13(9.1)**	**1300(7.3)**
Southsouth Zone	Akwa Ibom	2,606,882	2(1.4)	450(2.5)
	Bayelsa	1,079,112	3(2.1)	169(0.9)
	Cross River	1,830,219	1(0.7)	224(1.3)
	Delta	2,673,113	6(4.2)	477(2.7)
	Edo	1,999,596	4(2.8)	554(3.1)
	Rivers	3,448,217	5(3.5)	381(2.1)
	Zonal Sub-total	**13,637,140**	**21(14.7)**	**2255(12.6)**
Southwest Zone	Ekiti	1,540,063	3(2.1)	323(1.8)
	Lagos	5,878,940	20(13.9)	375(2.1)
	Ogun	2,455,260	8(5.6)	295(1.7)
	Ondo	2,201,237	3(2.1)	366(2.1)
	Osun	2,232,948	10(6.9)	213(1.2)
	Oyo	3,718,327	12(8.4)	245(1.4)
	Zonal Sub-total	**18,026,776**	**56(39.2)**	**1817(10.2)**
Northeast Zone	Adamawa	2,007,057	1(0.7)	546(3.1)
	Bauchi	3,109,783	2(1.4)	660(3.7)
	Borno	2,760,484	2(1.4)	630(3.5)
	Gombe	1,535,282	1(0.7)	456(2.6)
	Taraba	1,444,733	1(0.7)	360(2.0)
	Yobe	1,558,821	1(0.7)	428(2.4)
	Zonal Sub-total	**12,416,159**	**8(5.6)**	**3080(17.3)**
Northcentral Zone	Benue	2,699,068	2(1.4)	571(3.2)
	FCT Abuja	1,627,598	13(9.1)	484(2.7)
	Kogi	2,097,262	1(0.7)	237(1.3)
	Kwara	1,516,796	2(1.4)	120(0.7)
	Nasarawa	1,191,945	1(0.7)	307(1.7)
	Niger	2,626,859	3(2.1)	295(1.7)
	Plateau	1,974,979	1(0.7)	501(2.8)
	Zonal Sub-total	**13,734,507**	**23(16.1)**	**2515(14.1)**
Northwest Zone	Jigawa	2,754,958	3(2.1)	789(4.4)
	Kaduna	3,880,805	7(4.9)	1044(5.9)
	Kano	6,179,928	6(4.2)	1832(10.3)
	Katsina	3,705,536	1(0.7)	976(5.5)
	Kebbi	2,091,966	2(1.4)	1132(6.3)
	Sokoto	2,364,986	2(1.4)	630(3.5)
	Zamfara	2,126,185	1(0.7)	470(2.6)
	Zonal Sub-total	**23,104,365**	**22(15.4)**	**6873(38.5)**
National		**91,317,339**	**143 (100)**	**17840(100)**

Of the 17,840 AFP cases reported in the country in 2016, the number reported by the northern zones (north central, northeast and northwest) was 12,468(70%). The northwest zone alone reported the highest number of 6,873 (38%) of the AFP cases. In the southern zones (Southeast, southsouth and southwest) of the country, the southsouth zone reported the highest number 2,255 (12.6%) of AFP cases and the zone with the least number 1,300 (7.3%) of AFP cases was the southeast zone.

The total number of Physiotherapy providing centres in the country was 143; and out of these, the northern zones accounted for 53 (37%). Of the 90 (63%) Physiotherapy providing centres in the southern zones, the southwest zone alone accounted for 56 (39%). The zone with the least number 8 (5.6%) of the Physiotherapy providing centres was the northeast zone.

The number of universities actively providing training on Physiotherapy in the country was nine (9), with three additional universities at various stages of takeoff as shown in table 2.

Table 2: Distribution of Physiotherapy training institutions by zones in Nigeria (2017)

S/N	Name of University	Status of Physiotherapy training	Location (zone)
1	University of Ibadan	Active	Southwest
2	University of Lagos	Active	Southwest
3	Obafemi Awolowo University	Active	Southwest
4	University of Nigeria, Nsukka	Active	Southeast
5	Bayero University, Kano	Active	Northwest
6	University of Maiduguri	Active	Northeast
7	Nnamdi Azikiwe University	Active	Southeast
8	University of Benin	Active	Southsouth
9	Bowen University, Iwo	Active	Southwest
10	University of Ilorin	Preparing to takeoff	Northcentral
11	Federal University, Dutse	Preparing to takeoff	Northwest
12	Ondo State University of Medical Sciences	Preparing to takeoff	Southwest

Only two (22%) of the universities actively providing Physiotherapy training are based in the northern zones. Of the seven (78%) Physiotherapy training universities in the southern zones, four (57%) are based in the southwest zone. The northwest, northeast and southsouth zones have only one institution each that train Physiotherapists. The northcentral zone was yet to have a functional Physiotherapy training institution

Discussion

The high number of AFP cases detected annually in Nigeria calls for a better plan for them to access Physiotherapy services. However, considering its size, Nigeria has grossly inadequate number of Physiotherapists to meet the demands of its populace. Emanating from the very low number of Physiotherapy training institutions as well as the very low number of Physiotherapy services providing health facilities, Nigeria has one of the worst Physiotherapists per resident ratios in the world. With just over 2000 Physiotherapists currently practicing in the country, this figure does not compare favourably with close to 7,000 and 30,000 from South Africa and India respectively[15].

All this is against the background of global regulation of one Physiotherapist per 500 people. Nigeria has also not only lost many Physiotherapists to the United States of America and Europe, it has also provided Physiotherapists with advanced degrees and teaching experience to some training institutions in other African countries[16]. A survey of health workers' reasons for migration in four African countries (Cameroon, South Africa, Uganda and Zimbabwe) has given insight into the major reasons for migration from poorer countries to more developed ones. Such reasons include better renumeration, safer environment, improved living conditions; and lack of facilities among others[17]. In addition, Physiotherapists have expanded their areas of practice; hence, they are not limited to the hospital/clinical setting anymore. Their practice has extended to special schools, industries, nursing homes, school systems, and sports centers[18].

Apart from the need to care for AFP cases, Physiotherapists are increasingly having important role to play in health care as population ages and as diseases and other health events with physical disability outcomes become more prevalent.

Currently, access to Physiotherapy services in the country is restricted to major public health and some private health facilities; but more subjects needing such services attend public hospitals than private hospitals. High cost of Physiotherapy services in private hospitals and their limited capacity in terms of manpower and equipment may have influenced this outcome even though more patients were satisfied with Physiotherapy received in private than in public

hospitals possibly due to lower workload for the Physiotherapists with attendant decreased waiting time, and flexible appointments, two luxuries which are not obtainable in public health facilities[19].

Ignorance and wrong perception of the etiology of the cases as well as dissatisfaction with the health units are major reasons for late reporting of AFP cases. The first port of call is usually alternative health care system such as traditional healers and spiritualists because the people hold the belief that the problem is spiritually induced. The few, who make it to health units, are faced with ill equipped rural health workers who also lack the knowledge and awareness of what Physiotherapy can offer to these patients, hence the long wait for referral by a more qualified staff, who may take days to do so[20,21]. Indeed a study to determine Physiotherapists' professional identity as perceived by the general public in Nigeria found that only 16.8% of rural dwellers are aware of Physiotherapy profession[22].

The usual practice has been that a referral letter from a Physician or a specialist to the Physiotherapist is required in order for patients to access Physiotherapy services. Oftentimes, there is avoidable delay in this referral pathway, thereby resulting in complications that could be readily averted and preventing recovery that is achievable with early intervention of Physiotherapists.

Most AFP patients receiving Physiotherapy had been shown to have improved or have stable muscle strength at their final evaluation. These descriptive results highlight the need for further research into the potential benefits of Physiotherapy in polio endemic countries like Nigeria[23].

As most AFP cases are children below 5 years of age, their learning capacity and personal development is greatly interfered with if timely access to Physical Therapy services is restricted. Such children may in addition have problems in participating fully in school even though they have much to contribute to school life and have a right to equal access to participation in the community[24].

Article 26, Habilitation and Rehabilitation, of the United Nations *Convention on the Rights of Persons with Disabilities* (CRPD) calls for: "… appropriate measures, including thorough peer support, to enable persons with disabilities to attain and maintain their maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life". The Article further calls on countries to organize, strengthen, and extend comprehensive rehabilitation services and programmes, which should begin as early as possible, based on multidisciplinary assessment of individual needs and strengths, and including the provision of assistive devices and technologies[25].

The magnitude of the impact of paralytic illness on an individual over-shadows all other aspects of the illness. Unlike other dangerous illnesses with high mortality, most AFP victims live on, many of them permanently damaged. And as the number of the disabled grows larger year by year, the disease becomes a social rather than a medical problem[26].

Timely access to Physiotherapy services reduces the number of visits to emergency rooms, reduces chances of longer term complications and length of stays in hospitals as well as allows many to continue to live longer and relatively more productive lives rather than wasting away begging on the side of our streets with all the attendant risks and shame to our country[27].

We conclude that there is gross regional (northern versus southern zones) disparity in the distribution of Physiotherapy training institutions as well as Physiotherapy services providing health centres in the country and this needs to be urgently addressed. In addition, a modern health care system must do more than just stop people from dying. Rehabilitation should be central to the way health services are delivered and should also be integrated into primary health care service delivery. People have the right and need to be equipped to live their lives optimally, and contribute to family and community development. Effective rehabilitation results in better outcomes, improved quality of life and in the long run makes significant cost savings across the health care syatem[28].

Even after polio is finally eradicated, there is still going to be AFP cases due to other causes and millions of polio victims will be left with disability, social isolation and poverty due to polio and other causes. Ending polio does not mean an end to provision of access to Physiotherapy for AFP cases. Attention, funding and commitment should be focused to providing rehabilitative and other socio-economic needs of all AFP cases.

Contributions of the paper

- Magnitude of Acute Flacid Paralysis in Nigeria brought to the limelight

- Regional disparity in the distribution of Physiotherapy training institutions and service provision in Nigeria highlighted

- Major barriers to access to Physiotherapy services in Nigeria identified

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