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Full Length Research Paper

Utilization of In-Patient Physiotherapy Services in a Nigerian Teaching Hospital

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ABSTRACT

The aim of this retrospective study was to examine the trend and pattern of utilization of in-patient physiotherapy services in the management and care of patients by various medical specialties at the University of Benin Teaching Hospital, Benin City, Nigeria within a period of 4 years. Medical records of all patients admitted under various medical and surgical specialties in the hospital between 2007 – 2010 periods were analyzed to extract information regarding the age, sex, diagnoses, period of admission and referrals for physiotherapy services. The data obtained were fed into SPSS version 16.0 package and analyzed using descriptive statistics of mean, standard deviation and percentage. Results showed that in-patient physiotherapy services utilization correspondingly increased with increased in-patient admissions by various units and specialties in the hospital. However, surgery and internal medicine units had the largest physiotherapy services utilization across the 4-year period studied while the Obstetrics and gynaecology unit had the lowest referral rates and utilization of in-patients physiotherapy services. It is concluded that in-patients physiotherapy services utilization increased proportionally with increased hospital's patients care demand. However, the rate of utilization observed in the study even though similar to others in Nigeria, is lower than the rates seen in developed countries.

Keywords: *in-patients, physiotherapy, utilization*

INTRODUCTION

The Health Care System (HCS) is the organization of people, institutions and resources to deliver health care services to meet the health needs of target populations (Liverpool, 2011). There is a wide variety of health care systems around the world, with as many histories and organizational structures as there are nation's (Liverpool, 2011).

Health care services all over the globe depend on an interdisciplinary approach to provide the best and cost-effective treatment for their clients. In an interdisciplinary approach, members of the team work in

a coordinated manner to bring out the best for their clients (Vishal *et al.*, 2011). In a multidisciplinary team every member has the right to assess, set goals and provide prognosis for available cases. This requires good communication between health care professionals and adequate information about each other's skills and services (Vishal *et al.*, 2011).

Referral in HCS involves the directing, re-directing or transferring of a patient to an appropriate specialization or agency. Referral is horizontal when it occurs between units of the same institution and vertical when it is between units of different institutions (Barnett, 2006).

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Physiotherapy is a health care profession which involves patient evaluation through the administration of physical tests to determine the presence and or extent of injury prior to the use of physical modalities for preventive and therapeutic purposes. It is equally concerned with curative and rehabilitative services by the use of physical agents and modalities (Oke, 2004). Physiotherapy is involved in the management and rehabilitation of acute and chronic medical and surgical conditions. Physiotherapists also implement rehabilitation protocols designed to restore activities of daily living (Eni, 2008). The objective of the physiotherapy profession is to provide cost-effective services, towards the goal of enabling patients to be discharged earlier from acute settings as a result of increased independence, to accelerate their return to work and other activities, to prevent falls and complications that increase health care costs, and to minimize the burden of care on the family and other health professionals (Ayiesah & Zaleha, 2004).

The role of physiotherapy services has expanded beyond neuromuscular and cardiopulmonary rehabilitation, workplace consultation, as well as home therapy to expanded scope of practice in areas of musculoskeletal evaluation (Connolly *et al.*, 1998). Roberts *et al.*, (2002) further indicated that physiotherapy has developed an expertise not shared by other general practitioners. This expertise in musculoskeletal assessment and treatment has led to an expanded role of physiotherapists in many international jurisdictions. Physiotherapists have been found to provide care more quickly than the conventional route, and may reduce hospital costs (Dimmy, 1995).

The World Health Organization (WHO, 2007) estimates that 7- 10% of human beings have some degree of impairment or disability (Physical Disability and Rehabilitation Advisory working group, 2007). About 80% of these live in developing countries and of these, it is estimated that less than 5% have access to rehabilitation services (Physical Disability and Rehabilitation Advisory working group, 2007).

Medical referrals serve not only as a tool for communication, but as an indicator of the level of awareness of physiotherapy by referring health care professionals (Quartey *et al.*, 2009). In Nigeria, a referral letter from a doctor or a specialist to the physiotherapy department is required in order for patients to access physiotherapy services. However, physiotherapists are recognized as first contact health care providers along with physicians, chiropractors and naturopathic physicians in progressive health care systems in countries like Canada (Eni, 2007), Australia and Netherlands (Gallery, 1997; Sheppard, 1994). However,

this primary recognition and engagement of physiotherapists have not gained practice in Nigeria.

The practice of physiotherapy intervention prescription by physicians instead of proper referrals and the observation that most of such prescriptions are incorrect have been recorded in previous studies (Balogun 1998; Struber, 2003; Silva, 2005; Ross *et al.*, 2000; Dickson *et al.*, 2001). In Queensland, Australia, patients with work-related injuries must receive a referral from a General Medical Practitioner (GMP) to receive treatment from practitioners like the physiotherapists, chiropractors or osteopaths, even though these practitioners are primary care providers outside of the workers' compensation system. However, the GMPs are reported to have more professional dealings (in terms of referrals) with the physiotherapists in such developed countries than the chiropractors and osteopaths (Simpson, 1998). O'Cathain *et al.*, (1995) revealed that physiotherapists working in general practitioners' offices, on-site physiotherapy services resulted in 8% fewer referrals to Orthopaedics and 17% fewer referrals to rheumatology over a one-year period.

Physiotherapy in private industry has been shown to reduce the number of workdays lost by as much as 60% (Monahan, 1994). Additionally, workers' compensation claims and overall medical costs have been towered (Monahan, 1994). Appropriate referrals to physiotherapy can only be made if the referring surgeon has adequate knowledge about what physiotherapy can offer the referred patients. Lack of knowledge may, in turn, lead to delay or inappropriate referrals (Stanton *et al.*, 1985; Ritchey *et al.*, 1989). It has been shown in a number of studies that patients suffer unnecessarily for failure of being referred for physiotherapy by other medical personnel (Ahmad *et al.*, 2007; Owoeye, 2000). There is an increasing interest in monitoring medical practice (Love *et al.*, 2004). Previous studies have looked at the dynamics of general practitioners referrals for physiotherapy and modalities use, compared unit/specialty referral rates, etc but to our knowledge, no one has specifically studied in-patients physiotherapy services utilization in relation with the total hospital in-patient admission in Nigeria.

This study therefore aims at studying the extent and patterns of in-patient physiotherapy services utilization among different hospital specialties and units in a multi-specialty tertiary hospital in Nigeria.

MATERIALS AND METHODS

The study was carried out in the University of Benin Teaching Hospital (UBTH), Benin City, Edo State,

Nigeria. The records of all patients admitted and those referred for in-patient physiotherapy services from 2007 to 2010 were obtained from the hospital's medical records department and physiotherapy department's medical records unit. Approval for the study was sought for and obtained from the research and ethics committee of the hospital.

All the patients admitted into the various wards and units of the hospital within the study period (2007-2010) constituted the population for the study. The sample consisted of all the in-patients referred for physiotherapy from various units and specialties in the hospital. The units/specialties were categorized into Surgical, Medical, Obstetrics and Gynaecology and Paediatric units. The various sub specialties under these major divisions were captured under them.

Information regarding the sex, conditions for referral and referring units/ specialties were extracted from the case files and records of the sample. Inclusion criteria were being a hospital registered patient admitted in one of the wards under the care of a specialist/consultants; being referred for physiotherapy service intervention by the admitting consultant; and receiving physiotherapy care of any form while on admission in the hospital.

The data obtained were recorded and fed into SPSS version 16 package for statistical analysis. Descriptive statistics of mean, standard deviation and percentage were used to analyze the data.

RESULTS

A total 61,964 patients were admitted into the University of Benin Teaching Hospital (UBTH), Nigeria from the year 2007 to 2010 (UBTH Medical Records, 2011). From these admissions, a total of 2,767 referrals were sent and received by the in-patient units of the Department of Physiotherapy.

Table 1 shows the annual distribution of hospital admissions and in-patient physiotherapy referrals. There was an increase in hospital admissions from 2007 to 2008 but there was a subsequent decline from 2008 to 2010. This trend also reflected in the in-patient physiotherapy referrals. The trend was due to unstable hospital services due to series of industrial actions by various labour unions within the period.

In table 2, the annual sex distribution of hospital admissions and referrals showed that more females were admitted into the hospital ranging from 59.63% to 62.44% compared with males ranging from 37.56% to 40.37%. The reverse was the case in terms of referrals

from 36.51% to 39.97%. The reason for this trend is that the hospital is believed to a centre of excellence in gynaecological and obstetrics practice in the south-south geo-political zone of Nigeria where it is located, and most females who are admitted for child birth are discharged after delivery without need for referrals for physiotherapy.

Table 1
Annual Hospital Admissions and Physiotherapy Referrals

Year	Admissions	Referrals
2007	14,992	682
2008	16,466	773
2009	15,897	667
2010	14,609	645
Total	61,964	2767

Table 2
Sex Referrals Distribution of Annual Admissions and Physiotherapy.

Year	Admissions (A)	Male	%	Female	%
	Referrals (R)				
2007	A	5846	38.99	9146	61.01
	R	433	63.49	249	36.51
2008	A	6506	39.51	9960	60.49
	R	464	60.03	309	39.97
2009	A	6418	40.37	9479	59.63
	R	417	62.52	250	37.48
2010	A	5487	37.56	9122	62.44
	R	390	60.47	255	39.53

As shown in table 3, obstetrics and gynaecology had the highest (30.22% - 32.37%) of the total admissions while internal medicine had the least admission (10.84% - 22.85%) within the period (except for the year 2009 where surgery had the highest - 31.08%). However, the referral patterns to physiotherapy from specialty units varied from year to year.

Table 4 explicitly showed that the in-patient unit of physiotherapy department received the highest referrals from surgery (58.58% - 67.01%) followed by internal medicine (27.17% - 36.32%); obstetrics and gynaecology (2.09% - 2.93%) and the lowest were observed from the paediatrics unit (2.63% - 3.49%).

Table 3

Annual Distribution of Hospital Admissions and In-patient Physiotherapy Referrals per Unit

Unit/Year		2007		2008		2009		2010	
		No	%	No	%	No	%	No	%
Internal Medicine	Admissions	2209	14.73	3763	22.85	1722	10.84	1934	13.24
	Referrals	214	9.68	210	5.58	227	13.18	235	12.15
Obs & Gynae	Admissions	4845	32.3	4977	30.22	4842	30.46	4729	32.37
	Referrals	20	4.12	18	0.36	14	0.29	16	0.34
Paediatrics	Admissions	4221	28.16	4652	28.35	4393	27.63	3805	26.0
	Referrals	21	4.98	27	0.58	23	0.52	17	0.45
Surgery	Admissions	3717	25.15	3074	18.67	4940	31.08	4141	28.35
	Referrals	427	11.49	518	16.85	403	8.16	377	9.10

A = Admissions; R = Referrals; Obs & Gynae= Obstetrics and gynaecology

Table 4:

Summary of Annual In-patient Physiotherapy Referrals per Unit

Unit/Year	2007		2008		2009		2010	
	No	%	No	%	No	%	No	%
Internal Medicine	214	31.38	210	27.17	277	34.03	235	36.43
Obs & Gynae	20	2.93	18	2.33	14	2.09	16	2.48
Paediatrics	21	3.08	27	3.49	23	3.45	17	2.64
Surgery	427	62.60	518	67.01	403	60.42	377	58.45

Obs & Gynae= Obstetrics and Gynaecology

DISCUSSION

The purpose of this study was to examine the rate and pattern of in-patients physiotherapy services in a Nigerian tertiary health facility. The study showed that referral to in-patients physiotherapy unit was higher for males (60.03%- 63.49%) than females (36.51%-39.97%) despite the higher percentage of female admission (59.63%- 62.44%) into the hospital than males (37.56%-40.37%). This sex distribution pattern of referrals is in agreement with the reports of Ahmad *et al.*, (2007) and Aiyiesah *et al.*, (2004). The finding is, however, in contrast with the findings of Jorgensen *et al.*, (2001) and Siqueira *et al.*, (2005) who reported that women are more likely to use physiotherapy services than men. The outcome of this study showed an upsurge in hospital admissions in 2008 and a subsequent decline between 2009 and 2010. This trend also reflected accordingly in the in-patient physiotherapy referrals. This reduction in admissions and referrals could be attributed to series of strike actions called by labour and paramedical or medical unions in Nigeria that resulted in hospital shutdowns during this period.

The annual distribution of hospital admission and in-patient physiotherapy referrals per unit showed an irregular trend among the specialties across the four-year period studied except in paediatrics that had a persistent downward trend from 4.98% to 0.45% of total annual hospital admission across the period. There was a general low percentage reference across all units per annual hospital admission with internal medicine being the highest (range of 10.84% - 22.85%), followed closely by surgery (8.16% - 16.85%), then paediatrics (0.45% - 4.98%), and lastly obstetrics and gynaecology (0.29% - 4.12%). No previous study was found to have analyzed the annual distribution of hospital admissions and in-patient referrals per unit to act as a reference point in this regard. The results of the present study however showed that percentage of total annual hospital admissions being referred for in-patient physiotherapy services was quite low. This may be due to ineffective communication between physicians/ surgeons and the physiotherapists, inadequate knowledge and skepticism or lack of awareness of the components of physiotherapy (prevention, therapy and rehabilitation) among the physicians/ surgeons. The reports of Vishal *et al* (2011) have emphasized the need for therapists to involve

themselves in inter-professional discussion in order to improve knowledge of physical therapy procedures among referring surgeons.

The present study revealed that the hospital under study recorded the highest percentage of admissions in the obstetrics and gynaecology units followed by internal medicine. However, the in-patient physiotherapy referral was highest in surgery followed by internal medicine, paediatrics and then obstetrics and gynaecology. The highest referral pattern from surgery is consistent with the reports of Aiyesah *et al.*, (2004) while it is in contrast with the findings of Ahmad *et al.*, (2007) who reported highest referral from medicine (medical unit). However, these referral trends were recorded among out-patients. The high referrals from the surgery and internal medicine units could be attributed to the fact that the doctors in these units were more aware of the roles of physiotherapists in their patients' care, perhaps, due to more regular interactions between doctors and physiotherapists in these units of the hospital. Hendricks *et al.*, (2003) have reported that factors like good communication, optimal collaborations between primary care physicians and physiotherapists as well as good knowledge about changing research-based physiotherapy practices can result in increased utilization of physiotherapy services.

The high referrals from surgery unit may be attributed to the fact that this group of patients, especially in orthopaedics and neurosurgery, have obvious disabilities with reduced functional status and as such benefit immensely from physiotherapy management in order to regain functional independence. Health status related variables are indicators of utilization of physiotherapy services in health services utilization literature (Hendricks *et al.*, 2003). It could also be as a result of effective and purposeful interactions between the physiotherapists and the doctors in these units during joint clinical meetings and holistic grand-ward rounds.

This study showed that the obstetrics and gynaecology unit sent the least referrals to in-patient physiotherapy department. This is perhaps due to the short hospital stay of the patients in these units who are admitted just for delivery of babies. It could also be due to the doctors' ignorance about the preventive role of physiotherapy in ante-natal and post-natal patients.

This study has shown that frequent interactions between physiotherapists and doctors as well as awareness of the roles of physiotherapy and its preventive, therapeutic and rehabilitative components in patients' care are very important in the utilization of in-patient physiotherapy services. This shows further that the need for more awareness about the role of

physiotherapy in health care delivery cannot be overemphasized.

Physiotherapists need to create opportunities for interactions with other members of the health care team, especially the doctors, in order to create awareness about physiotherapy. This will no doubt lead to increase in utilization of physiotherapy services. This can be done via public lectures and grand ward rounds, clinical meetings and personal interactions.

There is need for further studies that will look into the various subunits and the conditions being referred for physiotherapy services from the core specialty units. There is also the need for more studies on the trend of referral for physiotherapy services in relation to the total hospital's patients' admission like it has been done in this research.

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