KNOWLEDGE AND PERCEPTION OF PRE-AND POST-OPERATIVE PHYSIOTHERAPY INTERVENTIONS AMONG MEDICAL DOCTORS IN TERTIARY HOSPITALS IN ANAMBRA STATE

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ABSTRACT

Background: Physiotherapy interventions reduce the length of hospital stay and also exert beneficial effects on physical fitness and post-operative outcomes across various surgical fields.

Aim:To determine the knowledge and perception of medical doctors on pre-and post-operative physiotherapy intervention, and the influence of age, gender, place of basic training/primary medical practice, and present career status on the variables.

Methods: 102 medical doctors (29 females and 73 males)working in the two tertiary hospitals in Anambra State, who gave their consent were consecutively recruited. Each of the participants responded to the self-reported questionnaire. Obtained data were summarized using the descriptive statistics of mean and standard deviation. Alpha level was se at >0.05.

Results:Mean knowledge of pre-and post-operative physiotherapy interventions was found to be 8.87 ± 1.66 and a perception score of 5.30 ± 1.72. Knowledge of pre-and post-operative physiotherapy had no significant correlation with their perception (p=0.629). The study also showed participants from institutions that trained physiotherapists had a significantly higher knowledge of the pre-and post-operative physiotherapy referrals than their counterparts that trained in institutions without physiotherapy (p =0.025).

Conclusion: Medical doctors in this study had good knowledge of pre-and post-operative physiotherapy interventions but a poor perception of pre-and post-operative physiotherapy interventions. Participants from institutions that trained physiotherapists had a significantly better knowledge of the pre-and post-operative physiotherapy.

Key words:*Knowledge, perception, physiotherapy intervention, surgery, referrals*

Introduction

The scope of physical therapy is dynamic and patient/client and societal health needs are the concern as well as identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation, and rehabilitation. Physiotherapy interventions are aimed at the prevention of impairments, activity limitations, participation restrictions, disability, and injury including the promotion and maintenance of health, quality of life, workability, and fitness in all ages and populations (World confederation for physical therapy)[1]. These interventions include but are not limited to: therapeutic exercise, functional training in self-care and home management, manual therapy techniques, airway clearance techniques, integumentary repair and protection techniques, electrotherapeutic modalities, physical agents and mechanical modalities, patient-related instruction, coordination, communication, and documentation[2]. Physiotherapy has its application in all most all disciplines of surgery such as orthopedics, neurology, cardiothoracic, oncology, obstetrics and gynecology, general surgery, plastic surgery, and cosmetic surgery[3].

Studies have shown that long periods of physical inactivity prior to and after surgery tend to induce loss of muscle mass, deconditioning, pulmonary complications, and decubitus, which can lead to decreased quality of life, increased morbidity, longer hospitalization, and even death[4-5]. Prior to surgery, physiotherapy interventions reduce the length of stay both in the intensive care facilities and in the hospital wards and it also exerts beneficial effects on physical fitness and postoperative outcomes across various surgical fields[6-8]. The major problems found in assessing a patient who has had a surgical procedure include: pain, reduced lung volume, muscle atrophy, reduction in functional residual capacity, reduction in partial pressure of oxygen (PaO_2), decreased cardiac output, deep vein thrombosis, and atelectasis[3]. These problems are addressed by postoperative physiotherapy interventions which are designed to be preventive and therapeutic while improving and maintaining the health of the patient[9]. Medical doctors are essential Healthcare professionals when it comes to referrals for physiotherapy services[10]. Medical doctors show profound influence on other health professions[11 - 12]. In Nigeria, the practice of physiotherapy on a first-contact basis is not common; physiotherapists depend largely on referrals from medical doctors in different areas of medical practice[13].

According to Vishal et al[14], appropriate referrals to the physiotherapist can only be made if the referring surgeon has sufficient knowledge about what physiotherapy can offer the referred patient. Odebiyi et al[13] recognized two types of physician-to-physiotherapist referral models in Nigeria: referral to take over management and referral for co-management.

Knowledge has been shown to be vital in generating appropriate actions by providing the background for articulating possible courses of action which will yield the intended result[15]. Although there have been studies on the knowledge and perception of physiotherapy among medical doctors, there has been no study on the knowledge and perception of pre-and post-operative physiotherapy interventions among doctors. Paul and Mullerpatan[16] review of physiotherapy awareness across the globe, reported low awareness among the general public. Physiotherapy plays an important role in the surgical journey by encouraging early ambulation and promoting the return of function of the patient[17-18]. Medical doctors who trained in Nigeria have been reported to have poor knowledge and awareness of the physiotherapy profession compared with their counterparts who trained in the developed countries[19]. They appear not to possess adequate knowledge and understanding of physiotherapy practice, roles, and services[13, 20]. Furthermore, in a survey involving 180 medical residents in India showed that the knowledge of medical residents about the role of physiotherapy pre-and post-surgical procedures was that: physiotherapy was 50% beneficial postoperatively, 48% pre-operatively, and 2% for both. The above findings show a lack of knowledge regarding the importance of pre-operative physiotherapy. This could be due to an assumption that post-operative chest physiotherapy and mobility is the only indication to minimize the effects of deconditioning post-surgery[21]. The result of a study done by Oke and Kubeyinje[22] showed that percentage of total annual hospital admissions being referred for in-patient physiotherapy services prior to and after surgery was quite low. They reported that this may be attributed to ineffective communication between surgeons and physiotherapists, and inadequate knowledge of the components of physiotherapy among the physicians/ surgeons. This study is therefore aimed to determine the knowledge and perception of pre-and post-operative physiotherapy interventions among medical doctors in a selected tertiary hospital in Anambra state.

Material AndMethods

Participants

A total of 102 medical doctors (29 females and 73 males) were consecutively sampled from the two tertiary hospitals in Anambra State, were recruited for this study. Sample size was calculated using G*power 3.0.10 software. A sample size of 102 participants has 85% power of detecting an effect size of 0.3 at an alpha level of 0.05.

Questionnaire Design

The questionnaire was adapted from a previous work by Odunaiya et al. (2013).The questionnaire was pilot-tested among doctors outside the research location (Nnamdi Azikiwe University Teaching Hospital, Nnewi and Chukwuemeka Odumegwu Ojukwu University Teaching Hospital,Awka) to ensure the questions were clear and easily understood by the participants. Thereafter, questions were modified to assess the knowledge and perception of pre-and post-operative physiotherapy interventions among medical doctors.

The questionnaire is a 32-item self-reported questionnaire with four sections. Section A collects data such as age group, sex, present career status, number of completed years of medical practice before specialization training, number of years of post-specialization practice for both consultants and senior registrars respectively, and place of basic medical training. Sections B and C bordered on general knowledge and perception of the pre-and post-operative physiotherapy treatment provided by physiotherapists. Section D is about the referral style of respondents. The options provided for the closed-ended questions were 3 Likert responses which are: Yes, No, and Not Sure.

The highest possible score for knowledge is =11. The score was ranked good (≥ 6) and poor (<6). Higher scores reflected good knowledge while lower scores denoted poor knowledge. The highest possible score for perception was 12. The score was ranked good (≥ 7) and poor (<7). Higher scores denoted good perception and lower scores denoted poor perception.

Procedure for Data Collection

Ethical approval was obtained from the Ethics Review Committee of the hospital (at Nnamdi Azikiwe University Teaching Hospital, Nnewi, and Chukwuemeka Odumegwu Ojukwu University teaching hospital, AmakuAwka) before the commencement of the study.

The informed consent of the participants was obtained prior to the administration of the questionnaire. The questionnaire was distributed by the researcher to the respondents and their confidentiality was fully ensured by using their initials instead of their full names.

Data Analysis

The descriptive statistics of mean and standard deviation were used to summarize the knowledge and perception of pre-and post-operative physiotherapy interventions amongst medical doctors. Inferential statistics of Kendall's tau correlation, chi-square, independent sample t-test, and one-way ANOVA test were used in testing the hypotheses. The alpha level was set at <0.05.

Results

Majority of the participants were either intern (34.2%) or medical officers (28.4%), within the age range of 21 years to 30 years, trained in the South-eastern Nigeria(81.4%), and have practiced for at least 2 years. The demographic characteristics of the participants were shown in Table 1. The mean and standard deviation of the participants' knowledge (*8.87 ± 1.66)* and perception (*5.30 ± 1.72)* showed that the participants had good knowledge about pre-and post-operative physiotherapy interventions and poor perception about the services.

Fifty-one participants (50.0%) were trained at either an institution that offers concurrent physiotherapy academic training or an institution without an entry-level physiotherapy programme.

There are two models of physiotherapy referral: with prescription (medical directive model) and without prescription (consultation model). The present study found that 58% of the participants referred with prescription, while 42% of the participants referred without prescription. The participants 32 (31.4%) tend to refer patients requiring physiotherapy intervention to a private physiotherapy clinic, 51 (50.0%) general and state hospitals' physiotherapy clinics, and 19 (18.6%) private or home services. None of the participants referred any physiotherapy patient to health instructors.

A Chi-square analysis was completed on the dataset to determine any significant association between the referral models and the institution of undergraduate medical training among the participants. There was no significant association between the referral model and school attended, χ^2 (1) = 0.362, p = 0.547 (Table 2).

T*he participants' knowledge of the* pre-and *post-operative physiotherapy interventions had no significant correlation with their perception of the services (*tau = *0.036,* p = *0.629) and years in practice (*tau = *0.079,* p = *0.325) (Table 3). Table 4 showed that there was no significant gender difference in the knowledge of the* pre-and *post-operative physiotherapy interventions (t =0.637, p = 0.526). Participants from institutions that trained physiotherapists had a significantly higher knowledge of the* pre-and *post-operative physiotherapy interventions than their counterparts that trained in institutions without physiotherapy academic training (t = 2.278, p = 0.025). Similarly, participants who used the consultation referral model had a significantly higher knowledge of the* pre-and *post-operative physiotherapy interventions than their counterparts that used the prescription model (t = 2.042, p = 0.044). Furthermore, a one-way ANOVA (Table 5) showed a significant difference in the knowledge of the* pre-and *post-operative physiotherapy interventions across career statuses,* F *(4, 97) = 2.964, p = 0.023. The pairwise post hoc test showed that* ***medical officers were significantly more knowledgeable than interns (MD = 1.29, p = 0.017).***

Table 1 Respondents' Demographic Characteristics

Parameter	Frequency (%)
N	102 (100)
Sex	
Female	29 (28.4)
Male	73 (71.6)
Age Range in years	
21– 30	51 (50.0)
31 – 40	33 (32.4)
41 – 50	10 (9.8)
Above 50	8 7.8)
Region Trained	
South East	83 (81.4)
South West	8 (7.8)
South South	4 (3.9)
North West	2 (2.0)
North Centre	2 (2.0)
Abroad	3 (2.9)
Practice Years	
0 – 2	50 (49.0)
3 – 5	26 (25.5)
6 – 8	15 (14.7)
Above 8	11 (10.8)
Job Rank	
Intern	33 (32.4)
Medical officer	29 (28.4)
Registrar	14 (13.7)
Senior registrar	17 (16.7)
Consultant	9 (8.8)
Practice Setting	
COOUTH	40 (39.2)
NAUTH	62 (60.8)
Knowledge	8.87 ± 1.66 †
Perception	5.30 ± 1.72 †

† variables reported as mean ± standard deviation.
Ranges: Knowledge (0 – 11), Perception (0 – 12)
COOUTH = Chukwuma Odumegwu Ojukwu University Teaching Hospital
NAUTH = Nnamdi Azikiwe University Teaching Hospital
Knowledge = knowledge of pre-and post-operative physiotherapy
Perception = perception of pre-and post-operative physiotherapy

Table 2 Association between referral method and type of institution

Parameter		Referral Mode		Total	χ^2-value	p-value
		Without prescription	With prescription			
Institution with physiotherapy training	No	23	28	51	0.362	0.547
	Yes	20	31	51		
Total		43	59	102		

Table 3: A matrix table showing Kendall's tau Correlation between age, knowledge, perception, and practice years (N = 102)

Parameters	Knowledge tau (p-value)	Perception tau (p-value)	Practice Years tau (p-value)
Age (years)	0.119 (0.143)	0.040 (0.624)	0.743 (<0.001) *
Knowledge	_	0.036 (0.629)	0.079 (0.325)
Perception	_	_	-0.068 (0.392)

* tau is significant at $p < 0.05$.

Table 4: T-test values for differences in mean knowledge and perception between sexes, type of institution of undergraduate training, and mode of referral

Parameter		N	Mean±SD	Mean Diff	t-value	p-value
Knowledge	Female	29	9.03±1.7	0.23	0.637	0.526
	Male	73	8.80±1.6			
	Institution trains PTs also	51	9.24±1.6	0.74	2.278	0.025 *
	Institution not training PTs	51	8.50±1.6			
	Refer without prescription	43	9.26±1.6	0.68	2.043	0.044 *
	Refer with prescription	59	8.58±1.6			
Perception	Female	29	5.31±1.9	0.01	0.024	0.981
	Male	73	5.30±1.7			
	Institution trains PTs also	51	5.31±1.6	0.02	0.057	0.294
	Institution not training PTs	51	5.29±1.8			
	Refer without prescription	43	5.77±2.1	0.80	2.373	0.020 *
	Refer with prescription	59	4.97±1.3			

* t-test is significant at $p < 0.05$. PTs = physiotherapists

Table 5: ANOVA results for differences in knowledge and perception across career statuses

Parameter	N = 102	Mean	S.D	(df_1, df_2)	F-value	p-value
Knowledge				(4, 97)	2.964	0.023*
Intern	33	8.25	1.59			
Medical officer	29	9.55	1.23			
Registrar	14	8.46	1.74			
Senior registrar	17	9.24	1.76			
Consultant	9	8.83	2.15			
Perception				(4, 97)	0.837	0.505
Intern	33	5.47	1.55			
Medical officer	29	5.59	2.20			
Registrar	14	4.86	1.39			
Senior registrar	17	4.82	1.09			
Consultant	9	5.39	2.04			

* F-statistic with p-value < .05 is significant. Medical officers were significantly more knowledgeable than interns (MD = 1.29, p = 0.017).

Discussion

The present study aimed at determining the level of knowledge and perception of pre-and post-operative physiotherapy interventions among medical doctors practicing in tertiary hospitals in Anambra State. One hundred and two doctors of which about three-quarters were males participated in the study. With regard to years of experience and professional status, the majority of the respondents were interns and medical officers who had just practiced for two years or less. The demography of the present study is appropriate for the study's aim and objectives. The study aimed to explore the levels of knowledge of participants and how gender, and place of basic medical training may have influenced their knowledge and perception of pre-and post-operative physiotherapy intervention. Furthermore, the percentile level of participants' perception of pre-and post-operative physiotherapy and their mode of referral was used to assess their perspectives regarding the physiotherapy interventions.

The present study found that the participants had a good knowledge of the physiotherapist's intervention in the pre-and post-operative conditions. This is in agreement with the report of Odunaiya et al[19], who reported that medical doctors had knowledge about the roles of physiotherapy.

Nonetheless, the participant's knowledge of the pre-and post-operative physiotherapy interventions had no significant correlation with their perception and years in practice. There was no significant gender difference in the knowledge of the pre-and post-operative physiotherapy interventions, this is similar to the findings of Vincent-Onabajo et al[10] but contrary to the findings of Odebiyi et al[11], who reported that male doctors were more knowledgeable. Participants from institutions that trained physiotherapists as well as medical doctors had a significantly higher knowledge of the pre-and post-operative physiotherapy interventions than their counterparts that trained in institutions without physiotherapy training and this are similar to the findings of Odebiyi et al[20]. The possible reason for this could be because of the presence of physiotherapy training programmes present in the various institution of training these participants with higher knowledge, which might have increased the possibility of participants coming in contact with physiotherapy students or going on ward rounds with physiotherapy students. According to the World health organization (WHO), a healthcare professional's knowledge of the expertise and capabilities of other professionals is essential for effective teamwork and enhances appropriate referral patterns and better coordination of care.

Appropriate referrals can only be made if the referring surgeon/doctor has adequate knowledge about what physiotherapy can offer patients. Similarly, participants who used the consultation referral (without prescription) model had a significantly higher knowledge of the pre-and post-operative physiotherapy interventions than their counterparts that used the medical directive referral (with prescription) model. These outcomes agree with the reports of Aiyesah et al[23] who reported high referrals from the surgical unit. Oke and Kubeyinje[22] also reported that the high consultation referral model from the surgery unit may be attributed to the fact that the doctors in these units were more knowledgeable about the roles and interventions of physiotherapy in their patients' care, probably due to regular interactions between doctors and physiotherapists in these units of the hospital. Furthermore, there was a significant difference in the knowledge of the pre-and post-operative physiotherapy interventions across career statuses, this report agrees with the findings of Odunaiya et al[19], who reported that present career status significantly influenced the knowledge of physiotherapy interventions. Senior registrars demonstrated better knowledge than registrars and medical officers were significantly more knowledgeable than interns. It is expected that those medical officers might have worked together with physiotherapists and perhaps gained some knowledge about physiotherapy scope of practice, roles, and interventions more than the interns freshly coming out of basic medical schools.

Another aim of the study was to determine the perception of the participants about pre-and post-operative physiotherapy. In this study, it was discovered that the participants had a poor perception of pre- and post- operative physiotherapy interventions, this is in agreement with the report of Abd El Baky [24], who reported a poor perception of physiotherapy by physicians and medical students in Sudayr region. The researcher suggests that the perception of pre-and post-operative physiotherapy interventions can be improved by inter-professional courses and better interaction between physiotherapists and medical doctors. Participants' perceptions of pre-and post-operative physiotherapy interventions did not significantly correlate with their knowledge or years of practical experience. There were no significant gender differences in participants' perceptions of pre-and post-operative physiotherapy interventions.

Similarly, there was no significant difference in perceptions between participants in institutions that train physiotherapists and physicians and their colleagues trained in institutions without physiotherapy training. Perceptions of pre-and post-operative physiotherapy interventions did not differ significantly across career status.

However, participants who used the consultation referral model (without a prescription) had a better perception of the pre-and post-operative physiotherapy interventions than their counterparts that used the medical directive model (with a prescription). Odebiyi et al [20] found that the majority of the respondents who received some form of introductory lectures in physiotherapy during their medical training graduated from medical schools with a physiotherapy training programme. This category of respondents believed that physiotherapists are trained enough to determine the right treatment for their patients; they also felt comfortable enough to refer patients for physiotherapy through the consultation model.

Odebiyi et al[13] identified two distinct physician-to-physiotherapist referral models in Nigeria: co-management and referral to take over management. In both cases, some physicians referred to the physiotherapist to review the patient and develop a therapy plan (consultation model), while others requested the therapist to use specific physiotherapy modalities and techniques (medical directive model; with prescription). The present study found that 58% of the participants used the medical directive model; this result is consistent with that of Odebiyiet al[20] and Ahmad et al[25]. The observation that most such prescriptions are incorrect has been reported in previous studies[26-30].

Conclusion

There was a poor perception of the pre-and post-operative physiotherapy services among the respondents. The respondents' knowledge and perception were found to be influenced by their institution of graduation, and this ultimately affected both how they used physiotherapy and their mode of referral for physiotherapy. Both the physiotherapist and the physician must have a solid understanding of their different responsibilities in pre-and post-operative interventions in order to work effectively as part of a multidisciplinary surgical team.

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