

Full Length Research Paper

Medication prescription policy for Nigerian physiotherapists: perception of orthopaedic surgeons and neurologists on educational training and clinical management plans

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In Nigeria, general medical doctors objected to physiotherapists assuming the responsibility of being supplementary prescribers. It is unknown if Nigerian specialist doctors (Orthopaedic Surgeons and Neurologists) will have different opinion on supplementary prescription (SP) policy. 71 orthopaedic surgeons and 53 neurologists were recruited using purposive sampling technique. A self-administered questionnaire was used to obtain bio-data, awareness on SP, knowledge about Clinical Management Plan and duration of educational training required. Descriptive and non-parametric inferential statistics were used to analyse the data. The level of significance was set at 0.05. The number of specialist doctors who were aware of the prescription status of physiotherapists outside Nigeria as supplementary prescriber was significantly higher than those unaware ($X^2 = 9.96$, $P = 0.02$). A high proportion (62.3 - 98%) of the specialists had good knowledge of Clinical Management Plan as required in SP policy. About half of the Orthopaedic Surgeons opined that 24-30 weeks educational training would be adequate for physiotherapists who did not have previous pharmacology education while most neurologists opined that a period greater than 12 weeks would be sufficient as training duration for those with previous education. It was concluded that most specialist doctors were aware of the prescription status of physiotherapists outside Nigeria as supplementary prescribers. Both Orthopaedic Surgeons and neurologists understood what are required in drawing CMP with allied health professionals as required in the policy. A period greater than 12 weeks would be sufficient for educational training for those who had previous pharmacology education while 24-30 weeks would be adequate for those without previous formal education.

Keywords: Drug prescription policy, Nigerian physiotherapists, orthopaedic surgeons, neurologists, educational training, clinical management plans.

INTRODUCTION

Physiotherapy is a dynamic profession and the scope of practice keeps expanding, especially in United Kingdom where specially trained physiotherapists are now Supplementary and independent prescribers (Bissel et al, 2008; Physioped, 2012). Legislative changes were made to confer right and privileges to other specially trained

health professionals other than doctors to prescribe specific medications in the UK (Emmerton, et al., 2005). Also, in Australia, Landbury and Sullivan (2002) reported that a significant number of physiotherapists give advice about prescription medication but many respondents felt they were inadequately educated in pharmacology.

Supplementary prescribing' (SP) is a new form of medication prescription that is being undertaken by non-medical health professionals after a doctor has made a diagnosis and drawn up a clinical management plan (CMP)

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for the patient in alliance with another health professional (Cook, 2002). It is 'a voluntary prescribing partnership policy patients with chronic conditions (DoH 2002; Courtenay, 2004; Physiotherapy Pain Association, 2007). The SP afford doctors time and energy to attend to emergencies, surgeries, critically ill patients, more acute conditions and other complicated conditions that require more complex treatments (Department of Health, 2005).

Clinical Management Plan (CMP) is the bedrock of supplementary prescribing in the United Kingdom, hence, it is obligatory for an agreed CMP in written or electronic format for a named patient and specific condition(s) to be managed by the supplementary prescriber (The Agency for Clinical Innovation, 2013). Also to be documented are date on which the plan is to take effect, review time by the doctor and warnings on sensitivities and dose which parties must strictly adhere to (Courtenay, 2004; Department of Health, 2005).

In Nigeria, doctors have the sole primary responsibility of prescribing medications for patients. Most Nigerian general medical doctors are unaware that physiotherapists are supplementary prescribers in the UK and majority of them objected to Nigerian physiotherapists being recognized as supplementary prescribers (Onigbinde et al, 2014). Whereas, in the United Kingdom (UK), physiotherapists have advanced from being supplementary prescribers in 2005 to independent prescribers in 2012; and this was aimed at improving patient's accessibility to medications (Onigbinde et al, 2014). Several reports showed that most health professional opined that SP is beneficial to patients; enhances timely use of medication, reduces patient anxiety and waiting time for medication; and that it provides a cost effective service to patients by reducing the number of visits to a medical practitioner, hence enabling services to evolve (Chartered society of physiotherapy, 2004; Onigbinde et al, 2013; Onigbinde et al, 2014).

There are several cases or pathologies where SP can be relevant in Nigeria context but those related to cerebrovascular accidents and musculoskeletal disorders remain the most common dysfunctions requiring physiotherapy and rehabilitation (Onigbinde et al 2013, Onigbinde et al 2014). These groups of patients require regular medications and review but they have no opportunity to regularly review the drugs as a result of poor accessibility to doctors and standard hospitals at the urban areas (Onigbinde et al, 2014). Autonomy among physiotherapists is still controversial especially to what extent physiotherapists should be restricted to prescribe. Also, there is a poor geographical distribution of health care professionals and this contributed largely to dearth in manpower of doctors in Nigeria (Osahon, 2013a). Subsequently, patients expected physiotherapists to review their medications. Previous reports in Nigeria showed that most health professionals excluding General Medical Practitioners supported physiotherapists to be

where there is an agreed patient-specific CMP with the patient's agreement', especially for Supplementary Prescribers (Onigbinde, et al., 2013; Onigbinde et al, 2014; Onigbinde et al, 2014a; Onigbinde et al, 2014; Onigbinde et al, 2014c). However, Nigerian physiotherapists receive referral mostly from specialists Neurologists and Orthopaedic surgeons. Furthermore, most Nigerian patients are of the opinion that physiotherapists should be allowed to become supplementary prescribers of relevant oral drugs and that, an enactment should be made to protect them against litigations (Onigbinde et al, 2014c). It is unknown if Nigerian specialist doctors (Orthopaedic Surgeons and Neurologists) will have different opinion if they are to develop Clinical Management Plan for patients in alliance with specialist physiotherapists as required under supplementary prescription policy. Also, in the UK, supplementary prescribers are expected to undergo specialist educational training for a greater focus on diagnoses, assessment and prescription but most Nigerian Physiotherapists have poor knowledge of essential pharmacotherapy (Onigbinde et al, 2012; Onigbinde et al, 2013). It is unknown if Nigerian specialist doctors have awareness that allied health professionals are supplementary prescribers of medications outside Nigeria. Furthermore, most previous studies focused on classes of drugs and were not specific on individual medications that physiotherapists should be allowed to prescribe. There is also dearth of empirical data on duration of educational training that will be regarded as appropriate or recommended as a pre-requisite to assume the status of a supplementary prescriber in Nigeria, hence, the need for this study.

MATERIALS AND METHODS

Respondents

The respondents in this study were recruited from selected government hospitals in South-West Nigeria. They are Consultants, Registrars and Senior Registrars in clinical residency training within the fields of Neurology and Orthopaedic Surgery.

Inclusion and exclusion criteria

The respondents were one hundred and twenty four specialist doctors (71 orthopaedic surgeons and 53 neurologists). They were licensed by Medical and Dental council of Nigeria and were Consultants, Registrars and Senior Registrars in the specialists' field of Neurology and Orthopaedic Surgery; and they had at least 2years clinical experience. Excluded were General Medical Practitioners (doctors) and specialists in other areas of medicine and surgery aside Neurology and Orthopaedics.

Table 1. Respondents' demographic and academic related data

Variables	Orthopaedic surgeons		Neurologists	
	Frequency	%	Frequency	%
Gender: Male	62	87.3	37	69.8
Females	9	12.7	16	30.2
Rank: Consultant	11	15.5	2	3.8
Senior Registrar	20	28.2	7	13.2
Registrar	34	47.9	42	79.2
Professor	—	—	—	—
Reader	—	—	—	—
Senior Lecturer	6	8.5	2	3.8
Work Settings:				
Teaching hospitals	66	93.0	43	81.1
State hospitals	—	—	8	15.1
Private hospitals	—	—	—	—
Academics	5	7.0	2	3.8
Others	—	—	—	—

Table 2. Awareness of Nigerian Orthopaedic surgeons and Neurologists about supplementary prescription in other countries

Awareness	Yes	NO	X ²	P
Orthopaedic surgeons	12	58	2.28	0.18
Neurologists	32	21	3.23	0.001
Combined specialists	44	79	9.96	0.02

Sampling technique

A sample of convenience was used to select the hospitals while the respondents were selected purposively. The minimum sample size was determined using Marther et al (2009) sample size table for estimating a proportion at a given precision level. Considering that respondents were specially trained doctors who were with low population, it was assumed that there would be a 10% marginal error with assumed response rate of 50% (Marther et al, 2009). Based on Marther et al (2009), sample size table, 150 respondents fulfilled the inclusion criteria for the study. However, only 124 completed and returned the questionnaires. The sites of this study were orthopaedic and neurology clinics of 5 University Teaching and one National orthopaedic hospitals.

Instrument

The instrument used for this research was a modified self-administered questionnaire used by Onigbinde, et al., (2014d). The questionnaire was divided into three sections namely: Section A: Demographic and Academic-related data while Section B contains questions on Current Awareness, Knowledge about Clinical Management Plan, Opinion on stage of rehabilitation to develop CMP and list of 41 suggested drugs likely to be prescribed by a specialist physiotherapist. The list contained Analgesics, NSAIDS, anti-diabetics, anti-

hypertensives, muscle relaxants and multivitamins. Section C sought for perception on sources that would improve pharmacological knowledge.

Prior to the study, a draft of the questionnaire was pilot tested in multistage phases. Ten physicians were asked to complete the modified questionnaire. This was to determine whether the questions were clear and appropriate. On the basis of their responses, changes were made to the questions' layout, content, wording and intent. The revised questionnaire was returned to these same physicians on three different occasions until it was certified to address aims and objectives of the study.

Procedure

Ethical approval was obtained from the Research and Ethics Committee of Institute of Public Health, Obafemi Awolowo University (IPH/OAU/12/516). Permission of the respective Consultants who were Heads of Department of either the Neurology or Orthopaedic clinic of the selected hospitals was sought. All the respondents consented to participate in the study. The copies of the questionnaire were administered to the respondents in the selected institutions personally and in order to maintain anonymity, respondent's name and address were not required. There was no time restriction for each respondent to complete the questionnaire.

Table 3. Knowledge of Orthopaedic Surgeon and Neurologists on Clinical Management Plan

Clinical Management Plan	Orthopaedic Surgeons		Neurologists	
	Frequency	%	Frequency	%
Plan that is developed with a patient for their care	31	43.7	51	96.2
Developed by Doctor, Physiotherapist and patient	34	47.9	33	62.3
*Developed by the Doctor and Physiotherapist alone	5	7.0	9	17.0
*Developed by the patient alone	2	2.8	1	1.9
Written and Electronic formats	60	84.5	40	75.5
Contains drugs to be prescribed by supp. prescribers	5	7.0	5	9.4
Contains drug to be restricted by supp. prescriber	3	4.2	3	5.7
Contains local guidelines	55	98.2	33	62.3
List of drug & adverse reaction	53	74.6	41	77.4

Incorrect option

Table 4. Sources of improving pharmacology knowledge

Sources	Orthopaedic Surgeons		Neurologists	
	Frequency	%	Frequency	%
Current school training	11	15.5	23	43.4
Review curriculum	61	85.9	47	88.7
DPT	4	5.6	5	9.4
Seminar & Workshop	39	54.9	36	67.9
Transitional DPT	-	-	-	-
Professional development	60	84.5	43	81.1

DPT – Doctor of Physiotherapy

Data analysis

Descriptive statistics of frequency, percentages, mean, standard deviation, Chi-square, Kruskal-Wallis and Mann-Whitney U test were used to analyse the data. The level of significance was set at 0.05 while SPSS version 23 was used to analyse the data.

RESULTS

The mean age of orthopaedic surgeons who participated in this study was 42.77 ± 8.10 years while that of neurologists was 30.42 ± 4.67 years. The gender distribution and work settings are presented in Table 1. Among the Neurologists 32 (60.4%) were aware of Supplementary Prescription Policy outside Nigeria. Amongst Orthopaedic surgeons, only 12 (16.9%) were aware of supplementary prescription. The result of the chi square test showed that number of specialist doctors who were aware of the prescription status of physiotherapists outside Nigeria as supplementary prescriber was significantly higher than those unaware ($X^2 = 9.96$, $P = 0.02$), (Table 2).

Fifty-one neurologists (96.2%) understood Clinical Management Plan (CMP) as that which would be

developed for patients for their care while thirty-three (62.3%) reported that it was a plan that is developed by the doctor, specialist physiotherapist and patient. Sixty (84.5%) orthopaedic surgeons understood that CMP could be in written or electronic format (Table 3). All the respondents (100%), both orthopaedic surgeons and neurologists either agreed or were indifferent to supplementary prescription of oral and injectable drugs by physiotherapists. They also opined that physiotherapists did not have enough knowledge to prescribe drugs. Only 2 (8.7%) Orthopaedic surgeons opined that 4-8 weeks will be adequate for physiotherapists with undergraduate pharmacology training to acquire enough pharmacology knowledge to become supplementary prescribers, 13 (56.5%) suggested 8-12 weeks and 8 (34.8%) opined that a duration greater than 12 weeks will be adequate. Also, only 3 (14.3%) neurologists opined that 8-12 weeks will be enough while 18 (85.7%) suggested greater than 12 weeks.

The result also showed that 13 (50%) Orthopaedic Surgeons opined that duration of 24-30 weeks educational training would be adequate for physiotherapists who did not have pharmacology training in undergraduate years. However, none of the neurologists responded to the question on the time adequate for those who did not have pharmacology training during the undergraduate year. For those who had previous pharmacology education, most neurologists

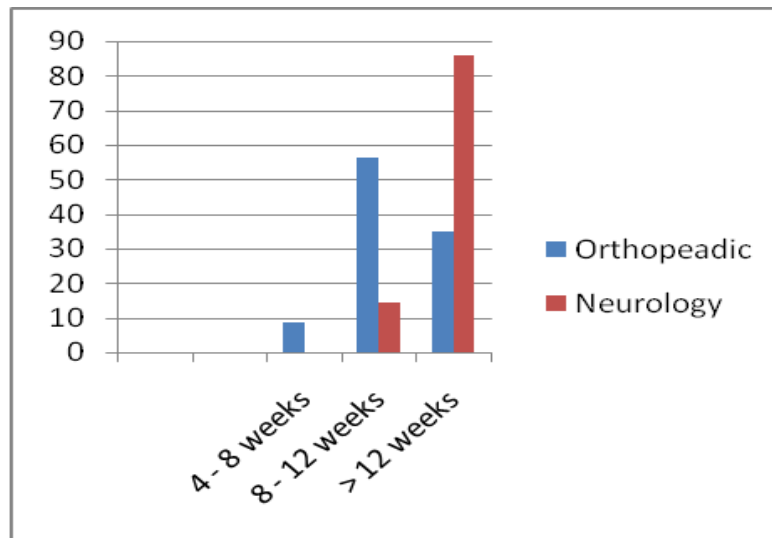


Fig 1: Required duration of training (with pharmacology education)

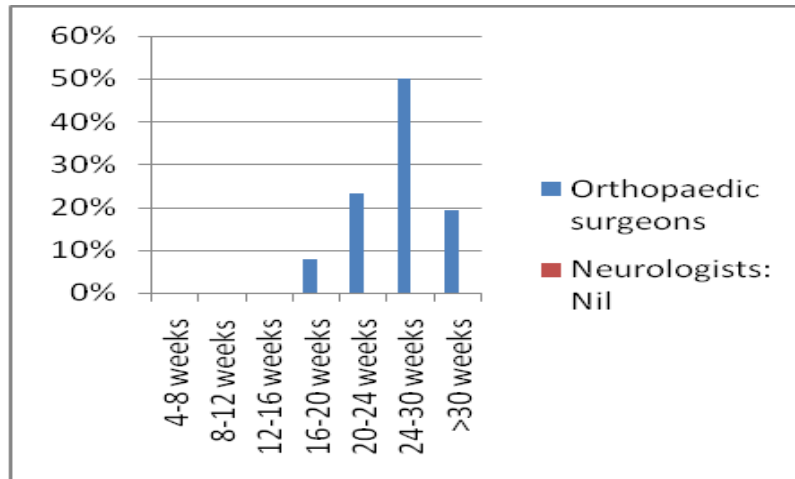


Fig 2: Required duration of training (without pharmacology education)

opined that a period greater than 12 weeks would be sufficient as duration for educational training (Fig 1- 2). Eleven (15.5%) Orthopaedic Surgeons were of the opinion that current schools training curricular would improve the knowledge of physiotherapists while 61 (85.9%) suggested that reviewing the academic curricular to accommodate intensive pharmacology education would improve their knowledge. Also 4 (5.6%) opined to the introduction of Doctor of Physiotherapy Curriculum (DPT). Thirty-six (67.9%) Neurologists opined that seminars and workshop for special certification is a good way to increase the physiotherapists' pharmacological knowledge, 43 (81.1%) supported continuing development programs. Responses on other means for improving physiotherapists' pharmacological knowledge are in Table 4.

Sixty-eight (95.8%) orthopaedic surgeons responded to the questions of "at which stage of patient's rehabilitation will CMP be drawn with specialist physiotherapists". Sixty-seven (98.5%) orthopaedic surgeons opined that CMP should be drawn at 2-4weeks after onset of the disease(s). Also, 17 (32.1%) neurologists opined that CMP should be drawn at 6 months after onset, (Table 5). The result of the Kruskal-Wallis test showed that the number of specialists who supported a duration of 2-4weeks after onset was significantly higher than that of other durations ($H=52.00$, $P = 0.001$), (Table 6). The results showed that only 70 (98.6%) orthopaedic surgeons responded to question on the change in prescription status of physiotherapists to that of supplementary prescribers. Only 5 (7.1%) surgeons supported the enlistment of physiotherapists as supplementary prescribers while 18 (25.7%) were

Table 5. Stage of rehabilitation for developing Clinical Management Plan

Onset	Orthopaedic surgeon		Neurologists		H	P
	Frequency	%	Frequency	%		
2-4weeks	67	98.5	16	30.2		
4-6weeks	-	-	-	-		
6-12weeks	-	-	1	1.9		
12-26weeks	-	-	6	11.3		
6months	1	1.5	17	32.1		
>6months	-	-	13	24.5	50.00	0.001

Table 6. Changing the prescription status to that of Supplementary Prescription

	Agreed		Indifferent		Disagreed		H	P
	Frequency	%	Frequency	%	Frequency	%		
Orthopaedic Surgeons	5	7.1	18	25.4	47	67.1	69.00	0.001
Neurologists	3	5.9	19	37.3	29	54.7	50.00	0.06

indifferent to it. Similarly, only 3 (5.9%) neurologists supported the policy of drug prescription that will permit Physiotherapists to be supplementary prescribers (Table 5). The result of the kruskal-wallis test showed that the number of neurologists and Orthopaedic Surgeons who disagreed with physiotherapists administering oral and injectable drugs was significantly higher than those who agreed or indifferent to it (Table 6).

Out of the 41 listed drugs (a multiple choice question), the specialist doctors chose only 18 drugs and the result showed that only 22 (31.0%) orthopaedic surgeons opined that physiotherapists should prescribe diclofenac, 11 (15.5%) supported prescribing codeine, 20 (28.2%) and 17 (23.9%) ibuprofen and piroxicam respectively. Three (4.2%), 3 (4.2%), 4 (5.6%) were in support of prescription of aspirin, meloxicam and ketoprofen respectively. Similarly, 10 (18.9%) Nigerian neurologists suggested that physiotherapists should prescribe neurobion/neurovite, 8 (15.1%) encephabol; 22 (41.5%) and 20 (37.7%) supported prescribing Vitamin B complex and Vit. C respectively. However, none of the orthopaedic surgeons nor neurologists opined to prescribing Diabenes, Insulin, Moduretics, Chlopropramide, Metformin, Aspart, Lisinopril, Nifedipine, Aldomet, Catopril, Ramipril, Propanolol, Chlorothiazide, and Furosemide. Other responses are presented in Fig.3 - 4.

DISCUSSION

In the UK, physiotherapists had gained full autonomy since 1977; hence, referral is not required from another health care professional before treating patients (Sandstrom, 2007; Durrell, 1996). Medicine controlled the education system of health care providers from 1945-

1960 but recently; there are new policies which provide more dynamic role for other health professionals aside medical doctors. As at 2015, the Misuse of Drugs Regulations 2001 was amended to allow physiotherapist independent prescribers to prescribe and administer a specified list of Controlled Drugs (Pharmaceutical Services negotiating Committee, 2016). Independent prescribing by physiotherapists in the UK supports patient-centred care, which enables new roles and better means of improving quality of services and effective services (AHPF, 2016).

Most specialist doctors in Nigeria were aware of the prescription status of physiotherapists outside Nigeria as supplementary prescribers. Contrarily, in UK, Bissell et al (2008) reported that doctors and patients were perceived to lack awareness of supplementary prescribing policy. The most essential step towards improving effective health care services is an inter-professional understanding of other member's unique role and contributions with patients' interest upper most (Onigbinde et al, 2014). Currently, physiotherapists in the UK can prescribe any medicine, under the terms of the patient-specific Clinical Management Plan (CMP) which has been agreed with a doctor, and this did not exclude controlled drugs and unlicensed medicines that are listed in the agreed CMP for any medical condition (Department of Health, 2006).

Both specialist doctors in this study showed good and comparable knowledge of what Clinical Management Plan (CMP) is, most especially, knowing it as that which would be 'developed for patients for their care', as a plan that is developed by the doctor, specialist physiotherapist and patient; and that it could be in written or electronic format. Considering the knowledge trend among both specialists on drawing of CMP as required by supplementary prescription policy, it is suggestive that

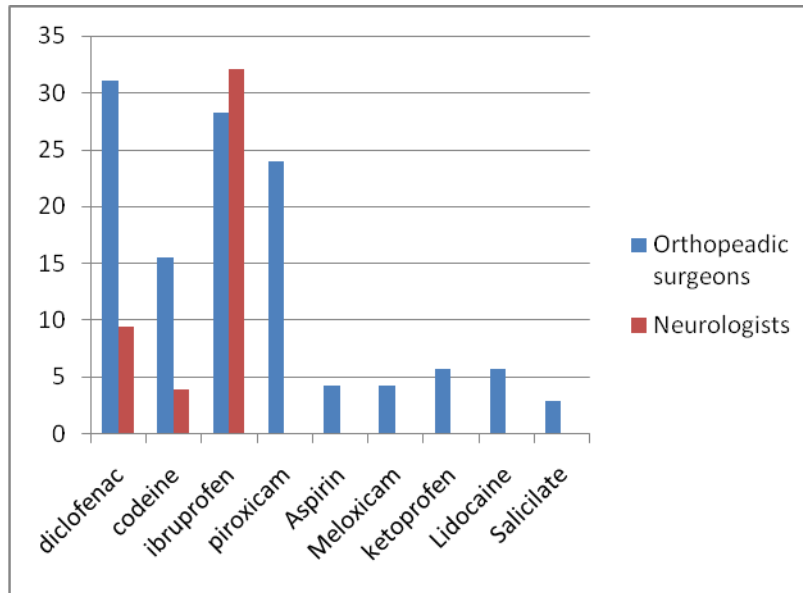


Figure 3. Analgesics and NSAIDs distributions

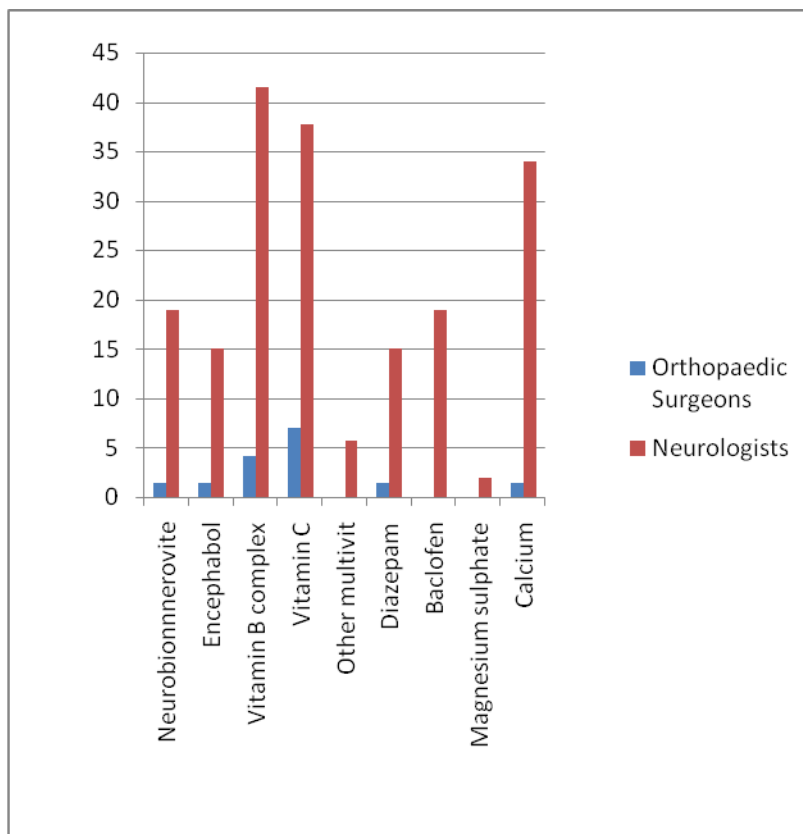


Figure 4. Multivitamins and Muscle relaxants distributions

there might be effective relationship between both specialists and physiotherapists if the system is introduced in Nigeria. A significant proportions of the specialists supported a duration of 2-4weeks after

onset as the most appropriate period that CMPs should be drawn. This finding did not absolutely contradict the opinion of a large number of General Medical Practitioners who opined that

physiotherapists would be relevant in chronic conditions as reported by Onigbinde et al (2014) because drawing plan at 2 – 4 weeks does not necessarily mean that the supplementary prescriber will assume role immediately at this period. .

Education training through classroom teachings and workshops are required for further certification. Both specialists opined that a range of a period of 8 weeks and above would be adequate to train physiotherapists who have had previous pharmacology educations. However, the neurology specialists did not suggest duration for educational training period for physiotherapists who had no pharmacology education but majority of Orthopaedic Surgeons opined a period greater than 30 weeks. The duration of educational training opined for physiotherapists in this study fell within the period used for training SPs in the UK. In the UK, the educational training comprises two main components, a university component equivalent to 26 days of full-time education (Stewart et al, 2012; The University of Nottingham, 2016). It was a combination of part-time teaching, face-to-face teaching, distance learning and self-directed study, over a period of between 3 and 6 months (Stewart et al, 2012). For the purposes of examination and certification, objectively structured clinical examinations (OSCEs) were adopted to assess effective teaching. Aside this, there is provision of a period of learning in practice (PLP) of a minimum of 12 days medically supervised practice (Stewart, et al, 2012). The sites of training programmes are higher educational institutions that are accredited by professional bodies/regulators in the UK (Stewart et al., 2012). Medical Supervision is undertaken with a doctor who is the Designated Medical Practitioner (DMP), (The University of Nottingham, 2016).

Allied health professionals were generally perceived to lack adequate pharmacology knowledge, counselling and clinical diagnostic skills. Most of the two specialists in this study were of the opinion that reviewing the academic curricular to accommodate intensive pharmacology education would improve knowledge of intending physiotherapists. This lent credence to the report of Onigbinde et al (2014) where General Medical Practitioners also opined that overhauling the school curricular would improve statutory pharmacological knowledge of physiotherapists. Most Orthopaedic Surgeons disagreed to the administration of oral and injectable drugs by physiotherapists, attributing this to poor knowledge of pharmacology. Most training institutions in Nigeria have expanded the curriculum to encompass more pharmacology, Neuroanatomy and Nutrition in Health and Diseases (Onigbinde et al, 2013) There has been previous recommendation that physiotherapists can use injection therapy to relieve pain and that they are capable of understanding disease processes, and also execute thorough assessment for decision making (Physioped, 2016). The Chartered

Society of Physiotherapy (2004) had also recommended that injection therapy could be administered by physiotherapists to treat various pathologies such as arthritis, tendonitis, capsulitis, bursitis, impingement syndromes, myofascial pain syndromes, entrapment neuropathy, ganglia and ligamentous injury. Furthermore, the Society of Musculoskeletal Medicine (SOMM) has been training UK physiotherapists in injection therapy skills since 2000 through an advanced programme, validated as part of the Masters degree certification at Middlesex University, London and this is as a result of Chattered Society of Physiotherapy's (CSP) decision to expand the scope of physiotherapy to include injection therapy (Society of Musculoskeletal Medicine, 2013). The general perceptions amongst stakeholders are that there are variations in the skills of allied health professionals and that this may necessitate additional and profession-specific training (Buckley et al, 2006). Nurses were observed to be deficient in basic pharmacological knowledge while the pharmacists lacked closeness to patient (Dawoud et al 2004).

It is noteworthy that out of 41 listed drugs in the questionnaire, the specialist doctors restricted their options of recommendation to only 18 drugs despite objection from most respondents. A large proportion opined that physiotherapists should prescribe diclofenac and ibuprofen and this was similar to the report of Onigbinde et al (2014e) where diclofenac (voltaren retard) and ibuprofen (ibrucap) were observed to be the most frequently prescribed NSAID. This was also consistent with the findings of Albsoul-Younes, et al (2004) in a Jordanian population. Nigerian physiotherapists had been reported to have good knowledge of the indications for the use of Diclofenac diethyl ammonium and Methyl salicylate (Onigbinde et al, 2013). This could be attributed to symptom of pain intensity that is usually associated with musculoskeletal dysfunctions. The opinion of orthopaedic specialist did not differ from that of general medical practitioner as reported by Onigbinde et al (2014). A considerable number of neurologists (41.5% and 37.7%) supported prescription of Vitamin B complex and Vitamin C while very few suggested neurobion/neurovite and encephabol. What could have influenced the opinion were that most neurological cases will require multivitamins in order to increase nutritional values of the nervous system, and are mostly Over The Counter (OTC) drugs. The choice of Neurologists did not differ from that of General Medical Practitioners (GMP) as reported by Onigbinde et al (2014) where most GMP did not support prescription of anti-hypertensive and anti-diabetics, excluding OTC classes of drugs. In the UK, physiotherapists who are independent prescribers have been prescribing all licensed medicines including 'off-license' or 'off-label'; for any condition within their competence within the overarching framework of human movement, performance

and function and they accept clinical/legal responsibility for their prescribing decision (Pharmaceutical Services negotiating Committee, 2016). The drugs being prescribed include but not limited to Diazepam, Dihydrocodeine, Lorazepam, Morphine, Oxycodone, Temazepam, by oral administration; Morphine for injectable administration; and Fentanyl for transdermal administration (Pharmaceutical Services negotiating Committee, 2016).

CONCLUSION

In conclusion, Nigerian Orthopaedic Surgeons and Neurologists have adequate knowledge of Clinical Management Plan (CMP) as required for supplementary prescribing policy. The two specialists opined that CMPs with specialist physiotherapists should be developed within 2-4 weeks of disease onset. Also, both specialist doctors opined that 8 - 12 weeks will be adequate to train physiotherapists with pharmacology education and 24 - 30 weeks for those without previous education during undergraduate training. The small sample size is a limitation of this study; hence, larger sample size should be considered in future studies.

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