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Prevalence and Pattern of Neck Pain seen at The Physiotherapy Department, University of Port Harcourt Teaching Hospital: A Five-Year Retrospective Study

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ABSTRACT

Background: Neck pain is on the increase mostly among the low- and middle-income countries, and impacts negatively on the healthcare system and quality of life of individuals. This study investigated the prevalence and pattern of neck pain seen at the Physiotherapy department, University of Port Harcourt Teaching Hospital, between year 2020 and 2024.

Methods: Retrospective study design was adopted for the study. A total of fifty- two (52) patient case files were extracted from the orthopedic unit of the physiotherapy department from 2020 to 2024 following ethical clearance. A patient extraction form was used to obtain information on the socio-demographic characteristics of the cases, different diagnostic tests for neck pain, diagnoses, pattern of occurrence, and treatment protocols. Descriptive statistics of mean, standard deviation, percentage, and Chi-square test were used to analyze the data. The level of significance was set as 0.05.

Results: The mean age of patients with neck pain was 51.73±10.40 years. There were 22 females (42.3%) and 30 males (57.7%), 41 cases of cervical spondylosis (78.8%), trauma 40 (76.9%), while fall and road traffic accident (RTA) accounted for 8 (15.3%) and 4 cases (7.7%) respectively. Cervical compression test was used for diagnoses in 41 patients (88.9%) while Distraction test was used for 31 cases (59.6%). Spurlin's test was used for the diagnoses of neck pain in 32 (42.3%). Forty-nine patients (94.2%) received cervical mobilization/traction as means of treatments while only one had Myofascial release (1.9%). Sixteen of the patients (30.8%) had Functional Activity Exercises and 25 (48.1%) received Neck Stabilization Exercises. There were significant associations between patient's age, occupation and the prevalence of neck pain ($X^2 = 58.20$, $p = 0.05$; $X^2 = 22.78$, $p = 0.001$).

Conclusion: Cervical spondylosis was the most prevalent cause of neck pain while cervical

mobilization/traction was mostly used for treatment. Also, there were significant associations between patient's age, occupation and the prevalence of neck pain. More awareness should be created to educate the populace on the prevalence, pattern, and causes of neck pain as well as factors that are associated with it.

Keywords:
Prevalence, Pattern, Neck Pain, Physiotherapy Department, UPTH.

INTRODUCTION

Neck pain (NP) otherwise known as Cervical spine pain (CSP) is one of the most common musculoskeletal disorders with standardized prevalence rate of 27.0 per 1000 population in 2019 [1]. It is a multifactorial disease and a major problem in modern society [2, 3]. Although it is not the most common musculoskeletal disorder, it is important due to the economic burden of neck pain, treatment cost, reduction in productivity and job-related problems [4 -6]. According to Kazeminasab et al., [5], neck pain is the most common musculoskeletal complexity with a high prevalence in adult and the elderly. Globally, neck pain is a significant contributor to disability and it differs among professions and demographic characters [7].

Neck pain is on the increase mostly among the low- and middle-income countries, and impacts negatively on the healthcare system and quality of life of individuals [8]. Determinants of neck pain are connected to some factors like physical activity, work habits, repetitive movements, personal functional level, age and bad postures [9, 10]. Previous research works have shown that neck pain among the employees may be increased in the coming years [11-13]. In Africa and Nigeria in particular, a study on neck pain found that the impact of neck pain is high [5]. The occurrence of neck pain may be due to individual attributes, e.g. age, sex, body mass index and smoking [5, 14].

Abifarin [15] reported that neck pain was due to improper posture, degenerative conditions history or previous injury, infection and tumors. The most recent global burden estimates the prevalence and incidence of neck pain globally have increased from 124.4 million and 276.5 million cases in 1990 to 222.7 million and 475.2 million cases in 2019 respectively [16]. Neck pain is one of the most leading causes of disability in most parts of the world and contribute to the highest expenditure in healthcare where about 134.5 billion dollars was reported in U.S.A in 2016 [17]. In terms of burden of neck pain disability, it is higher in women than men but increases in age in both gender 45 – 54 years and later decline to 70-74yrs [17]. In low-income countries in Africa where there is a rapid increase in population and aging, neck pain will be an issue to contain with in future [18-20]. This may be attributed to limited health resources, low socio-economic status and lack of preventive measures. Neck pain is common among people living in city than rural areas [7]. This is due to their active involvement in activities of daily living in terms of the demands of their profession.

Various studies have reported the prevalence and pattern of neck pain in urban region [14, 21, 22], but little is done on this condition in rural community especially in Nigeria. Over the years, it appears there is increasing incidence of neck pain conditions seen in the spine unit of Physiotherapy department of the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt. However, there is dearth of empirical data to establish the prevalence and pattern of neck pain in this environment. This influx of neck pain cases in the spine unit of physiotherapy department UPTH and dearth of empirical data regarding the subject area in the region informed the decision to investigate the prevalence and pattern of neck pain seen in the department between year 2020 and 2024.

METHODOLOGY

Study design:

The study adopted a retrospective study design in which data was derived from the case files of neck pain patients seen between year 2020 and 2024.

Study Area

The study was carried out in spine unit of the department of physiotherapy in University of Port Harcourt Teaching Hospital, Rivers State, which is within the South-South, Nigeria. The University of Port Harcourt Teaching Hospital is a tertiary health facility saddled with the responsibility of service, training and research. It is also a referral centre that receives serious health conditions from primary, secondary and private health facilities all over the state and adjourning state like Abia, Akwa Ibom, Bayelsa and Imo State. The site is adequately equipped as an existing spine management unit of the department.

Study Participants

Being a retrospective study, materials were drawn from all patient's case files and patients' attendance record book between 2020-2024 at the physiotherapy department. The access to the patient's case files and attendance record book were achieved after obtaining an ethical approval from the Education Research and Training Committee of physiotherapy department and another ethical approval from University of Port Harcourt Teaching Hospital research committee. Information about the patients seen in Physiotherapy department between year 2020 and 2024 was extracted from these files and records to form the participants in this study. The participants were delimited to the number of patients and their information between the said period.

Inclusion and exclusion criteria

The inclusion criteria were only all the case notes of patients with neck pain that were treated at the outpatient unit of the department of physiotherapy between year 2020 and 2024. Patients with neck pain who did not receive regular treatment for at least one month were excluded from the study.

Sample size determination and sampling technique

The study population included the total number of patients with neck pain sourced from the patients' case files between year 2020 and 2024 and outpatient attendance record book in the department of Physiotherapy University of Port Harcourt Teaching Hospital. All case files in the Spine Unit were retrieved and purposive sampling technique was used select cases of neck pain.

Ethical Clearance

Ethical approval for the study was obtained from the Ethics Research Committee of the University of Medical Sciences, Ondo, Ondo State. The reference number of the letter of approval is UNIMED-HREC/Apv/2024/060. Permission was sought and granted from the department of Physiotherapy UPTH where data was collected.

Procedure

The researcher made use of three trained research assistant in sorting all neck neck cases between 2020 and 2024 from the patient records and the case files. Data was collected by using data extraction form designed by the researcher. Data included socio-demographic information such as age, sex, occupation, level of education and marital status etc. Occurrence which indicates the number of patients seen in the department within the period studied was also established. In the same vein, the pattern of occurrence

which showed the percentage in each year was also included. The collected data was presented in a tabular form indicating yearly prevalence, demographic and pattern, to ensure accurate numbers of prevalence each year, and one patient one chance method was adopted**.**

Data Analysis

The extracted data was analyzed using statistical package for social sciences (SPSS) IBM version 29. Descriptive statistics of mean, standard deviation, and percentages were used to summarize the data for continuous and categorical variables respectively. Chi-square test statistic was used to determine the association between neck pain and socio-demographic variables. Level of significance was set as 0.05.

RESULTS

Table 1: Socio-demographic characteristics of the Patients (n =52)

Variable	Category	Frequency	Percentage (%)
Age (Mean ± SD)	51.73 ± 10.40	-	-
Sex	Male	30	57.7
	Female	22	42.3
Marital Status	Single	4	7.6
	Married	48	92.3
Occupation	Actor	2	3.8
	Clergy men	3	5.8
	Businessmen	6	11.5
	Media men	2	3.8
	Students	2	3.8
	Civil Servants	37	71.2
Educational Level	Primary	7	13.4
	Secondary	21	40.3
	Tertiary	24	46.3

Table 1 shows that the mean age of the cases seen within the period under review was 51.73±10.40. Out of the total 52 cases seen, 30 (57.7%) were males while 22 (42.3%) were females. Most of the cases were married 48 (92.3%), civil servants 37 (71.2%), and had tertiary education 24 (46.3%).

Table 2: Yearly Frequency and Percentages of Pattern of Occurrence of Neck Pain (n =52)

Year	Frequency	Percentage (%)
2020	5	9.6
2021	7	13 .5
2022	11	21.1
2023	12	23.1
2024	17	32.7
Total	**52**	**100**

Table 2 shows the yearly frequency and percentages of occurrence of neck pain with the year 2024 having the highest frequency and percentage, while 2020 had the lowest.

Table 3: Diagnoses of the Neck Pain, Pattern of Occurrences and Treatments Protocols (n=52)

	Type of Activity	Frequency (p-value)	Percentage (%)
Diagnostic Tests	Cervical Compression test	41	88.9
	Cervical Distraction test	31	59.6
	Digital pressure	21	40.4

	Plain Radiograph	12	23.1
	Spurlin's test	22	42.3
Diagnoses	Cervical Spondylosis	41	78.8
	Whiplash Injury	11	21.2
History of Causes	Fall	8	15.3
	RTA	4	7.7
	History of Trauma	40	76.9
Treatments	Cervical mobilization/traction	49	94.2
	Myofascial Release	1	1.9
	Sustained passive stretching	1	1.9
	Cryotherapy	33	63.5
	Hot pack	6	11.5
	IRR	7	13.4
	Stimulation Massage	2	3.8
	Functional Activity Exercises	16	30.8
	Grip strengthening Exercise	1	1.9
	Neck Stabilization Exercises	25	1.9
	Postural Education Training	1	1.9
	Neck Strengthening Exercises	1	1.9

Table 3 shows that that cervical compression test was utilized for diagnoses in 41 patients (88.9%) while Distraction test was used for 31 cases (59.6%). Spurlin's test was used for the diagnoses of neck pain in 32 (42.3%) while plain radiograph was utilized in 23 cases (12.1%). Forty-nine patients (94.2%) received cervical mobilization/traction as means of treatments while only one had Myofascial release (1.9%). Sixteen of the patients (30.8%) had Functional Activity Exercises and 25 (48.1%) received Neck Stabilization Exercises. Cryotherapy was utilized in 33 patients with neck pain, as treatment modality (63.5%). The duration of treatment for most applications were 10 seconds (44.2%), 15 seconds in 13 patients (25.0%) and 20 seconds in 6 (11.5%); and 3 repetitions of exercises in 6 (11.5%).

Table 4: Association between Patients' Age, Occupation, Marital Status, Educational Qualifications and the Prevalence of Neck Pain

Association	X^2	**p-value**
Diagnoses vs Age	58.2	0.05*
Diagnoses vs Marital	10.66	0.22
Diagnoses vs Occupation	62.79	0.001*
Diagnoses vs Education	1.44	0.84

Significant* $p \leq 0.05$ = significant

Table 4 shows that there were significant associations between patient's age, occupation and the prevalence of neck pain (X^2 = 58.20, p = 0.05) and (X^2 = 62.79, p = 0.001). However, there were no significant associations between marital status, educational qualifications and the prevalence of neck pain.

DISCUSSION

This study investigated the prevalence and pattern of neck pain seen at the Physiotherapy department, University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt. The result revealed that the prevalence of neck pain greatly increased from 5 (9.6%) in year 2020 to 17 (32.7%) in year 2024. The smaller number seen in 2020 could be attributed to the world epidemic of covid-19. This finding is supported by Shitu et al. [23] who carried out a study on prevalence of neck pain among heavy truck drivers. Also, the prevalence of neck pain was highest among civil servant which is attributed to occupation. A study by Bazvand et al. [24] on the prevalence of neck pain among nurses working in a hospital is similar to the finding of this study.

Furthermore, the findings of this study demonstrate a notable overlap of diagnostic tests among patients presenting with neck pain, with the cervical compression test emerging as the most frequently used diagnostic test for neck pain. Provocative tests like the cervical compression and traction/distraction tests are widely used in clinical practice to evaluate cervical radiculopathy and nerve root compression, often in conjunction with patient history and imaging findings. Although the accuracy of individual clinical tests varies, combining compression test with traction or distraction tests has been suggested to increase diagnostic likelihood when consistent with clinical presentation [25]. Cervical spondylosis was also identified in this study as the predominant causative pathology for neck pain. This aligns with epidemiological literature identifying cervical spondylosis as a common degenerative condition affecting the cervical spine, particularly in middle-aged and older populations, and often associated with chronic pain and radiculopathy [26 – 28]. The degenerative changes inherent to cervical spondylosis including disc degeneration, osteophyte formation, and foramina narrowing can contribute to nerve root and spinal cord compression, thereby manifesting in symptoms detected by provocative tests such as cervical compression [28].

The treatment patterns observed in this study revealed an overlap in therapeutic modalities, with cervical mobilization and traction being the most frequently employed interventions. Manual techniques and traction are commonly integrated into Physiotherapy care for cervical spine disorders, reflecting a multimodal approach intended to address pain, improve range of motion, and reduce neural compression. Mobilization techniques, including passive joint movements and oscillatory glides, have been applied to reduce stiffness, enhance functional mobility, and stimulate mechanoreceptors to modulate pain perception [29 – 32]. A systematic review of manual therapy interventions suggests that combining mobilization with exercise may offer benefit in managing pain and functional limitations, although evidence regarding the additive benefit of traction remains mixed [33.

Traction as a treatment modality has been theorized to widen intervertebral foramina and relieve nerve root compression. Some clinical investigations have reported statistically significant effects of traction on pain reduction in cervical radiculopathy [34-36]; however, the clinical relevance of these effects is debated, as some trials find no significant advantage of traction over other physical therapy interventions or placebo. Despite this, traction continues to be widely used in clinical practice as part of a comprehensive management plan. Conversely, neck strengthening exercises were the least utilized intervention in this study, despite evidence highlighting the role of exercise therapy in improving neck muscle strength, functional capacity, and long-term management of chronic neck pain. Strengthening and motor control exercises targeting deep neck flexors and extensors are recommended components of conservative care for cervical spondylosis and radiculopathy due to their potential to improve postural support and reduce mechanical stress on cervical structures. The relatively low frequency of prescribed strengthening exercises in this study may reflect practitioner preference, patient factors, or resource limitations and warrants further exploration given the established benefits of exercise-based rehabilitation in the literature.

Conclusion

Cervical spondylosis was the most prevalent cause of neck pain while history of trauma was the most causative factor. Cervical mobilization/traction was mostly used for treatment while Myofascial Release was the least used. Also, there were significant association between patient's age, occupation and the prevalence of neck pain. More awareness should be created to educate the populace on the prevalence, pattern, and causes of neck pain as well as factors that are associated with it.

Conflict of Interest

The authors declared no conflict of interest whatsoever.

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