

**THE PREVALENCE OF NECK PAIN AMONG
SECONDARY SCHOOL TEACHERS IN ILORIN, KWARA
STATE.**

BY

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20/05PTP002

**A PROJECT SUBMITTED TO THE DEPARTMENT OF
PHYSIOTHERAPY, FACULTY OF BASIC MEDICAL AND
HEALTH SCIENCES, THOMAS ADEWUMI UNIVERSITY,
OKO, KWARA STATE IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF BACHELOR
OF PHYSIOTHERAPY (B.PT.) DEGREE
(AUGUST 2025)**

CERTIFICATION

This project by Abifarin, Toluwanimi Olamide is accepted in its present form as satisfying the requirement for the award of Bachelor of Physiotherapy (BPT) degree of the Basic Medical and Health Sciences of Thomas Adewumi University, Oko, Kwara State.

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DEDICATION

I dedicate this research project to God Almighty for His infinite grace, wisdom and strength throughout the course of this study.

Also my beloved parents, Mr. and Mrs. Abifarin, for their unwavering support, encouragement and sacrifices.

ABSTRACT

Neck pain is a common musculoskeletal disorder affecting various professions, including teaching, with secondary school teachers being particularly vulnerable due to the inherent demands of their occupation, such as prolonged static postures and repetitive movements. This study aimed to investigate the prevalence of neck pain and its associated risk factors among secondary school teachers within Ilorin west, Kwara State.

A descriptive cross-sectional survey design was employed, involving secondary school teachers from selected schools in Ilorin west. Data were collected using a structured, self reported questionnaire, which gathered information on demographic variables, period of practice, and the prevalence of neck pain.

There is a prevalence of neck pain among the study population of 74 participants indicating a notable prevalence in females participants, older participants and experienced participants within this population. Analysis of associated factors in 74 participants demonstrated that certain demographic variables, including gender (Average NDI score = 25.53%) and age (Average NDI score = 29.83%), and period of practice (Average NDI score = 27.6%) were related to the experience of neck pain. These findings align with broader international literature highlighting the multifactorial nature of musculoskeletal pain in teaching professions.

In conclusion, neck pain is a common musculoskeletal issue among secondary school teachers in Tanke district, Ilorin, with its occurrence influenced by a combination of demographic and work-related factors. These results underscore the importance of targeted interventions and ergonomic considerations to promote the well-being of teachers, ultimately contributing to improved productivity and quality of education.

Keywords: Neck pain, musculoskeletal pain, work related, Secondary school teachers.

ACKNOWLEDGEMENT

First and foremost, I express my profound gratitude to Almighty God for granting me the strength, wisdom and good health for completing this research project successfully.

To my parents and siblings, Mr. Oluyomi Abifarin, Mrs. Olarewaju Abifarin, Oluwanifemi, Omotola, Ikeoluwa and Feranmi for their prayers, moral, financial and emotional support. I am eternally grateful.

I would like to thank my supervisor, Dr. Mohammed Hauwa, for her guidance, constructive criticism and unwavering support throughout the course of this study.

Special appreciation goes to Dr. S.G Akinwale, the Head of Physiotherapy Department and University of Ilorin Teaching Hospital (UITH) clinicians and lecturers in persons of Dr. Anjorin, Dr. Zainab Abdulrahman, Dr. Abolarin, Dr. Salisu, Dr. Jogunola, Dr. Aderibigbe, Dr. Alaba and Dr. Oyewumi for their academic, practical input and encouragement.

I also wish to acknowledge all the secondary school teachers in Tanke District, Ilorin, who participated in this study for your cooperation and openness.

I want to acknowledge my friends and colleagues Oluwatobi Olajide, Dr. Geoffrey, Victoria Felix, Joshua Agbe and my coursemates ‘PRIMA ASTRA’ who stood by me, offered assistance and contributed to the completion of this work in one way or another. May God bless you all.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

Neck pain is a common musculoskeletal disorder affecting various professions, including teaching (Iqbal, 2013). Secondary school teachers are particularly vulnerable to neck pain due to prolonged periods of standing, sitting, and repetitive movements (Darwish *et al*, 2013). Studies have shown that the prevalence of neck pain among secondary school teachers varies globally, with some countries reporting higher rates than others (Mohd Azuan *et al*, 2020). The teaching profession is known to be physically demanding, with teachers often required to stand for long periods, bend, and lift heavy materials (Zhang *et al*, 2019), while people with forward head posture (FHP) are prone to develop neck pain and related disability (Ahmad *et al*, 2021). Repetitive movements, such as writing on the blackboard or using a computer mouse, can also contribute to the development of neck pain (Zhang *et al*, 2019). Studies have identified several risk factors that contribute to the development of neck pain among secondary school teachers (Zhang *et al*, 2019). These include demographic factors such as age, gender, as well as work-related factors like prolonged standing, sitting, and repetitive movements (Zhang *et al*, 2019). Psychological factors, such as anxiety and stress, can also play a significant role in the development of neck pain among teachers (Zhang *et al*, 2019). The impact of neck pain on secondary school teachers can be significant, leading to absenteeism, reduced productivity, and decreased job satisfaction (Yue *et al*, 2016). Neck pain can also affect teachers' overall quality of life, making it

difficult for them to perform daily activities and enjoy leisure time. Furthermore, neck pain can lead to lost productivity, which can have a significant impact on the education system as a whole (Yue *et al*, 2016).

In recent years, there has been increasing recognition of the importance of workplace health and safety in the education sector (Zamri *et al*, 2017). Many schools and educational institutions are taking steps to promote teacher well-being and reduce the risk of musculoskeletal disorders. However, more research is needed to understand the specific needs of secondary school teachers and to develop targeted interventions to prevent and manage neck pain. This study aims to contribute to the growing body of research on neck pain among secondary school teachers. By investigating the prevalence, risk factors, and impact of neck pain on teachers.

1.2 STATEMENT OF PROBLEM

Secondary school teachers play a crucial role in schools and neck pain among secondary school teachers can lead to absenteeism, reduced productivity, and decreased quality of life. Despite the significant impact of neck pain on teachers' well-being and job performance, there is limited research on the prevalence and risk factors of neck pain among secondary school teachers in Ilorin, Kwara state. The lack of research on neck pain among secondary school teachers in Ilorin, Kwara state is a significant concern, as it hinders the development of effective prevention and management strategies. Without a clear understanding of the prevalence and risk factors of neck pain, it is challenging to design and implement targeted interventions to reduce the burden of this condition on teachers. The limited research on neck pain among

secondary school teachers may be attributed to the lack of awareness about the importance of workplace health and safety in the education sector. Many schools and educational institutions may not prioritize teacher well-being, and instead focus on academic achievement and student outcomes.

However, it is essential to recognize that teacher well-being is closely linked to student outcomes and academic achievement. When teachers experience neck pain and other musculoskeletal disorders, it can impact their ability to teach effectively, leading to decreased student engagement and academic performance.

This study endeavored to evaluate the prevalence of neck pain, this study aimed to respond to the subsequent research questions:

1. What is the prevalence of neck pain among secondary school teachers in Tanke district, Ilorin, Kwara state?
2. Which risk factor plays a major role in development of neck pain?

1.3 AIM OF THE STUDY

The aims of this study was to identify:

1. Prevalence of neck pain among secondary school teachers.
2. Some of the associated risk factors.
- 3.** The limitations and inefficiencies it contributes to their work and productivity.

1.4 SPECIFIC OBJECTIVES

The specific objectives of this study were to:

1. Determine the prevalence of neck pain among secondary school teachers in Ilorin west, Kwara State.
2. Determine the possible associated risk factors to the prevalence of neck pain in secondary school teachers.

1.5 SIGNIFICANCE OF THE STUDY

This study would contribute to the understanding of neck pain among secondary school teachers, informing prevention and intervention strategies to mitigate this occupational health issue. It would also contribute to understanding neck pain prevalence and risk factors among secondary school teachers in Nigeria, inform development of targeted interventions to reduce neck pain in this population and enhance awareness and advocacy for occupational health and well-being among educators.

1.6 SCOPE OF THE STUDY

The scope of this study focused on the teachers in secondary schools in Ilorin, Kwara state. This study aimed to identify the prevalence of neck pain and risk factors and was limited to a specific area in Ilorin which provided an insight into the body of the teacher's association and its value for teachers' health and productivity.

1.7 LIMITATIONS OF THE STUDY

The limitations of this study included:

1. Cross-sectional design cannot establish causality or temporal relationships.
2. Sampling bias due to selection of participants, it may not represent the entire population.
3. Lack of objective measures such as radiological or clinical assessments.
4. Comorbidities may be present; presence of other health conditions may confound results.
5. Results may not apply to other teacher populations (e.g., primary or tertiary education).

1.8 DEFINITION OF TERMS

Secondary school teachers: Also known as high school teachers or middle school teachers are trained professionals responsible for instructing and guiding students in various academic subjects during their secondary education.

1.9 ABBREVIATIONS AND ACRONYMS

CDC: Centre of Disease Control and Prevention

FHP: Forward Head Posture

CHAPTER TWO

LITERATURE REVIEW

2.1 THE EPIDERMIOLOGY OF NECK PAIN

Teachers play vital roles in the lives of the students in their classrooms (Oseni *et al*, 2023). They are best known for the role of educating the students that are placed in their care and serving many other roles in the classroom (Oseni *et al*, 2023). They set the tone of their classrooms, build a warm environment, mentor and nurture students, become role models and listen and look for signs of trouble (Oseni *et al*, 2023). They shape the culture of their classrooms, improve student learning, and influence practice and production (Oseni *et al*, 2023). The ability to manage a classroom effectively is increasingly becoming a fundamental need in any quest for effective teaching and learning worldwide (Oseni *et al*, 2023). In Nigeria, the urge is about the same as the issue of classroom management effectiveness has become crucial and recurring in educational discourse (Oseni *et al*, 2023).

Teaching is one of the professions where incidence and prevalence of neck pain is high due prolonged use of computers, which has further increased as a result of online teaching amid pandemic, is known to cause neck pain and alter posture, while people with forward head posture (FHP) are prone to develop neck pain and related disability (Ahmad *et al*, 2021). Teachers are also among the professionals who encounter diverse ergonomic risk factors (Abdul Rahim *et al*, 2022). Teachers' responsibilities involve repetitive duties, fixed postures, and occasionally extended work hours (Chong *et al*, 2010). Apart from

teaching, teachers also engage in evaluating students' schoolwork or homework (Coledam, 2019).

Neck pain is a common occupational health problem associated with a number of professions. Many studies indicate that neck pain is common among teachers, yet no published study was found to address the prevalence and risk factors of neck pain in Iranian school teachers (Ehsani *et al*, 2018). A study conducted in Malaysia found that the 12 month prevalence of neck and/or shoulder pain among secondary school teachers was 60.1% (Zamri *et al*, 2017). Another study in China reported a prevalence of neck/shoulder pain among school teachers of 48.7%, with female teachers experiencing higher rates than males (Yue *et al*, 2016). A systematic review of musculoskeletal disorders among school teachers found that the prevalence of neck pain ranged from 24% to 69.3% (Erick *et al*, 2020).

Even when neck pain is reported separately, there is still evidence that it is a prevalent musculoskeletal disorder among school teachers with studies from different countries reporting prevalence rates above 50% with high levels reported in Turin, Italy at 75.6% (Converso *et al*, 2018) followed by Nigeria at 57% (Ojukwu *et al*, 2021), Botswana at 50.2% (Erick *et al*, 2014) and Bolivia at 47% (Solis-Soto MT *et al*, 2017). Other countries however reported low prevalence rates of neck pain among teachers. Low prevalence of neck pain have been reported among Saudi female teachers (11.3%) (Abdulmonem *et al*, 2014) and Nigerian teachers (3.2%) (Musa-Olokuta. 2020).

Female gender, increasing age, long working hours, history of injury, and frequent head down posture are some of the risk factors that have been associated with development of neck pain among them (Erick *et al*, 2014). A

systematic review found that neck among school teachers had a multifactorial origin, which included individual, physical and psychosocial factors (Erick *et al*, 2011). Poor postures, inappropriate workstations, lifting and carrying heavy objects were the common work-related physical factors. Psychological distress is another factor that needs to be considered. The concept of psychological distress is a broad label given to a variety of states and responses related to depression and anxiety. Previous studies indicated that there was a high prevalence of psychological distress among school teachers, however the evidence on the relationship between psychological distress and neck pain is still lacking (Korkmaz, 2011).

2.2 AETIOLOGY OF NECK PAIN

Neck pain is a common clinical presentation with a myriad of aetiologies (Alisha *et al*, 2024). Neck pain can be classified into episodic, inflammatory, referred, psychogenic, and chronic (Alisha *et al*, 2024). Neck pain therefore may not simply be a symptom of degenerative change in the structure of the spinal column, but rather a symptom that may herald the future development of degenerative cervical myelopathy (Alisha *et al*, 2024).

The intervertebral discs in the cervical spine undergo age-related degeneration, leading to structural changes and clinical symptoms, such as cervical region pain exacerbated by movement (Alisha *et al*, 2024). Aging reduces the water content in the nucleus pulposus, subsequent protrusion or extrusion can irritate local neural structures, serving as a potential neurological pain source in the cervical region (Alisha *et al*, 2024). Progressive intervertebral disc changes lead to an unequal distribution of forces across the endplates, resulting in the

remodelling of the adjacent vertebral bodies. These changes include increased anteroposterior length of the vertebrae, decreased intervertebral height, osteophytes, and bone spur formation (Nouri *et al*, 2022). Intervertebral disc degeneration can also have downstream consequences such as ligamentous changes, and cervical alignment adverse alterations including the development of kyphosis, scoliosis, hyperlordosis, or listhesis (Nouri *et al*, 2022). All of these changes can individually or collectively be often associated with pain (Nouri *et al*, 2022).

2.3 ANATOMY OF THE NECK

2.3.1 Bones of the neck

The skeleton of the neck is formed by the cervical vertebrae, hyoid bone, manubrium of the sternum, and clavicles. These bones are parts of the axial skeleton except the clavicles, which are part of the appendicular skeleton (Moore, 2013). Seven (7) cervical vertebrae form the cervical region of the vertebral column, which encloses the spinal cord and meninges. The stacked, centrally placed vertebral bodies support the head, and the intervertebral articulations, especially the craniovertebral joints at its superior end, provide the flexibility necessary to allow positioning of the head (Moore, 2013).

2.3.2 Muscles of the neck

The muscles of the neck can be broadly categorized into anterior, lateral, and posterior groups, each with specific functions related to head and neck movement.

Anterior Neck Muscles

- a. Sternocleidomastoid (SCM): A large, superficial muscle that allows for head rotation and flexion (Spine, 2019).
- b. Suprahyoid muscles: Located above the hyoid bone, these muscles (digastric, mylohyoid, geniohyoid, stylohyoid) help elevate the hyoid bone during swallowing (Spine, 2019).
- c. Infrahyoid muscles: Found below the hyoid bone, these muscles (sternohyoid, omohyoid, sternothyroid, thyrohyoid) depress the hyoid bone (Spine, 2019).
- d. Scalenes: A group of three muscles (anterior, middle, and posterior) that flex and laterally bend the neck, and can also act as accessory muscles for breathing (Spine, 2019).
- e. Prevertebral Muscles: Deep muscles like longus capitis and longus colli that flex and stabilize the cervical spine (Spine, 2019).

Posterior Neck Muscles

- a. Trapezius: A large muscle that extends from the base of the skull to the middle of the back, responsible for elevating, rotating, and retracting the scapula, as well as extending the head (Spine, 2019).
- b. Suboccipital Muscles: A group of four small muscles (rectus capitis posterior major, rectus capitis posterior minor, obliquus capitis superior, and obliquus capitis inferior) that rotate and extend the head (Spine, 2019).
- c. Deep cervical extensors: Include muscles like the semispinalis capitis, semispinalis cervicis, and multifidus, which extend and rotate the head and neck (Spine, 2019).

d. Erector Spinae: A group of muscles along the spine, including the spinalis, longissimus, and iliocostalis, that extend and stabilize the neck (Spine, 2019).

Other Notable Muscles

- a. **Levator Scapulae:** Attaches to the upper cervical vertebrae and the scapula, assisting with elevation and downward rotation of the scapula (Spine, 2019).
- b. **Platysma:** A thin, superficial muscle that covers the front and sides of the neck, involved in depressing the mandible and drawing down the corners of the mouth (Spine, 2019).

2.3.3 Innervation of the neck

The neck's nerve supply involves both the cervical spinal nerves and certain cranial nerves, working together to control movement and sensation in the head and neck region. The cervical plexus, formed by spinal nerves C1-C4, is crucial for sensory and motor functions of the neck including the cranial nerves like the accessory nerve (XI) and the hypoglossal nerve (XII) contribute to neck muscle innervation.

Clinical Significance include

- a. **Injuries:** Damage to cervical nerves can lead to weakness, numbness, or pain in the neck, shoulder, arm, or hand, depending on the specific nerve affected.
- b. **Blocks:** Cervical plexus blocks are sometimes used for pain management and anesthesia in the neck region.

- c. Ansa Cervicalis Paralysis: Paralysis of the ansa cervicalis can affect voice quality due to the loss of support for the larynx.

2.3.4 Blood supply of the neck

The neck's blood supply primarily comes from the common carotid arteries and their branches, the internal and external carotid arteries, as well as the vertebral arteries. The common carotid arteries, one on each side of the neck, ascend and divide into the internal and external carotid arteries. The external carotid artery supplies structures of the face and neck, while the internal carotid artery enters the skull to supply the brain. The vertebral arteries also contribute to the blood supply of the neck and brain (Adrian, 2023).

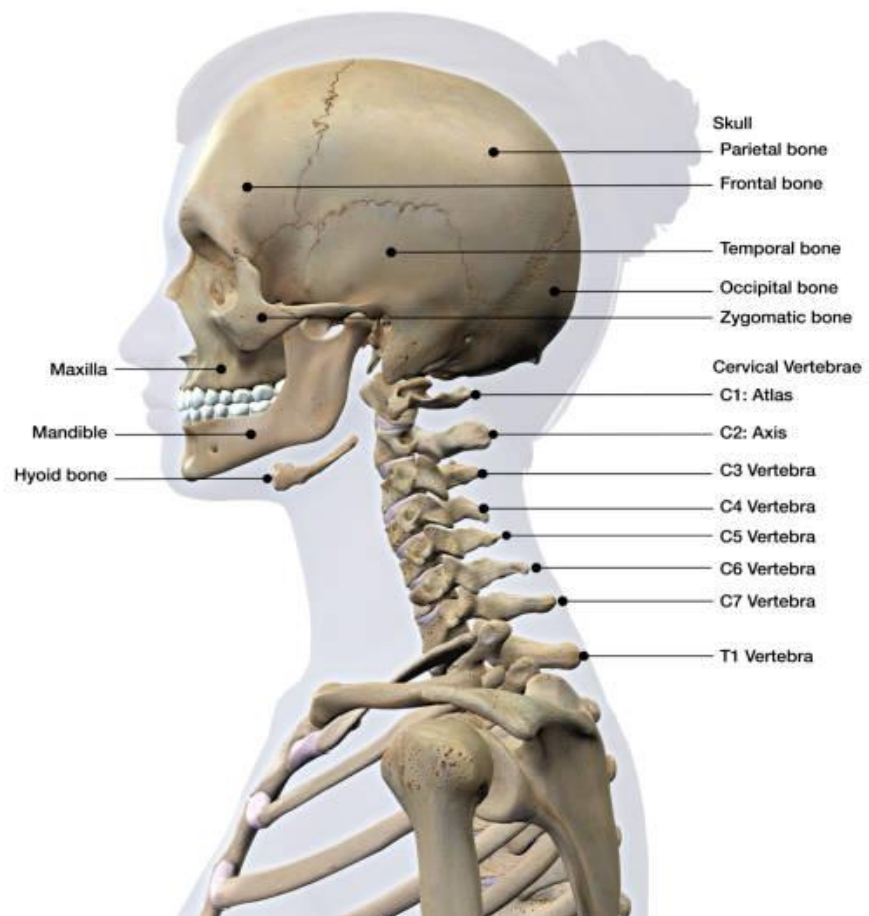
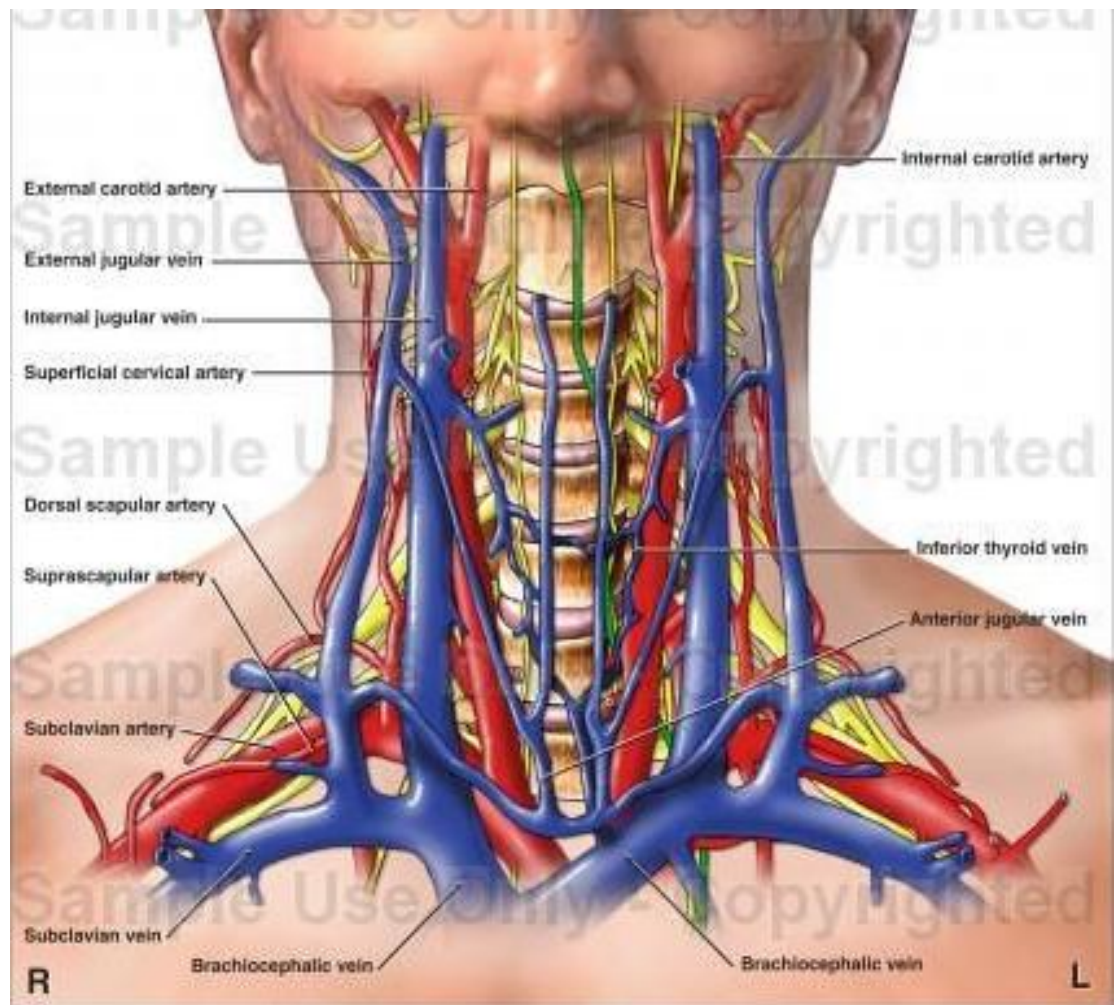
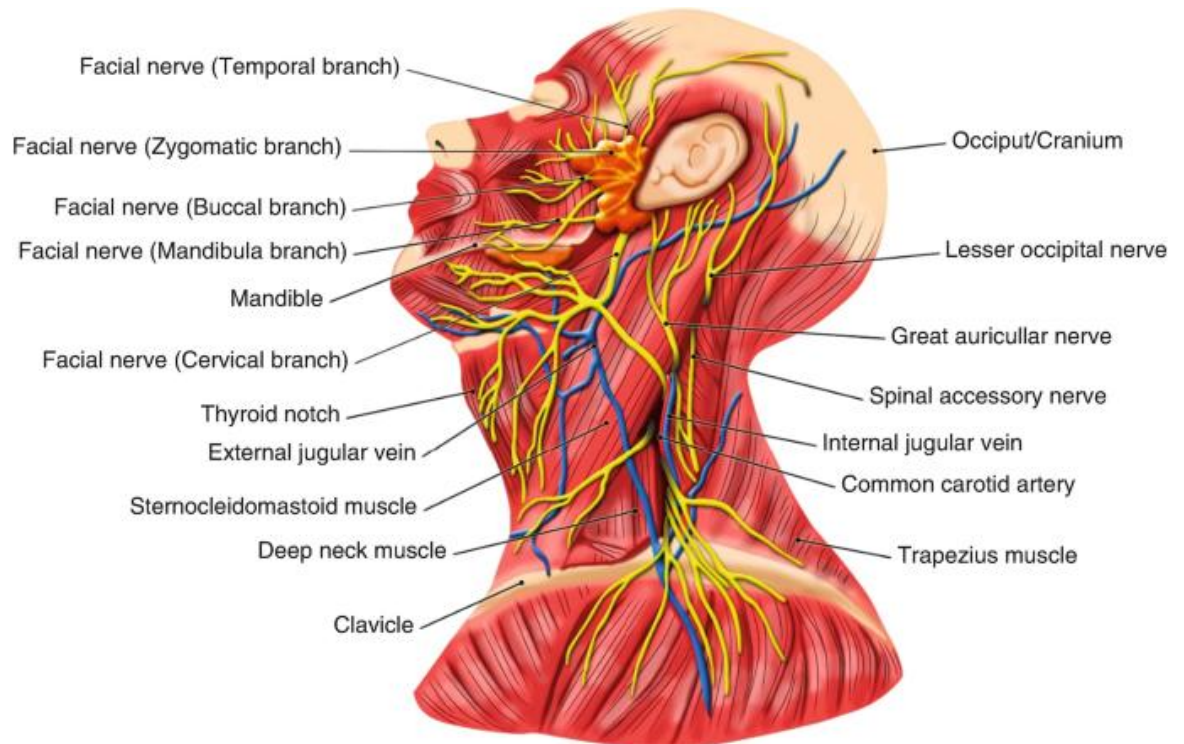


FIGURE 1; BONES OF THE NECK (LATERAL VIEW)



**FIGURE 2; NECK BLOOD VESSELS AND NERVE SUPPLY
(ANTERIOR VIEW)**



**FIGURE 3; NECK MUSCLES AND NERVE SUPPLY
(LATERAL VIEW)**

2.4. COMPARATIVE ANALYSIS WITH OTHER PROFESSIONS

School teachers constitute an occupational group which reported a high prevalence of work-related musculoskeletal disorders (Fahmy *et al*, 2022). Neck pain (56.1%) was the most prevalent work-related musculoskeletal disorders followed by shoulders (53.2%), low back (53.2%) and knees (50.6%) pain (Fahmy *et al*, 2022).

Neck pain affects a large proportion of the office workers at the Ministry of Health, and this pain is significantly associated with long working hours and males. Females were less likely to suffer neck pain than males (OR = 0.52, 95%CI [0.30,0.87]), and age, BMI, level of education, and profession were not associated with likelihood of having neck pain. However, reduced working hours were associated with a reduction in the likelihood of having neck pain (Alhakami *et al*, 2022).

Musculoskeletal disorders are the second-most common complaint among surgeons, they have a high level of neck and back pain (Alshareef *et al*, 2023). The prevalence of back, neck, and shoulder pain among the studied surgeons was 68.2%, 56.9%, and 46.2%, respectively, while the overall prevalence of MSP was 87.2% (Alshareef *et al*, 2023).

The prevalence of work related musculoskeletal disorders among bankers was high and the significant associated factors responsible for the occurrence of work-related musculoskeletal disorders include longer working experience, being above 30 years old, low educational status, physical exercise, job stress, poor posture, absence of breaks during working hours, and absence of ergonomic training (Kasaw *et al*, 2018).

2.5. RISK FACTORS

Gender Differences

Several studies have established that female teachers are more likely to report neck pain than their male counterparts. This disparity may be due to physiological differences (such as reduced muscle strength or hormonal influences), dual work burdens (work + domestic), and psychosocial stress. In Iran, female teachers had significantly higher 12-month neck pain prevalence compared to males (Arefi *et al.*, 2018).

A review also noted that women were 1.5–2 times more likely to report neck in occupational settings (Wang *et al.*, 2023). Similarly, found that female Ethiopian teachers had higher odds of reporting neck pain (Belay *et al.*, 2019).

Age-Related Factors

Age has a dual influence it reflects both biological changes and cumulative exposure to occupational strain (Arefi *et al.*, 2018). Studies among Iranian and Ethiopian teachers show a consistent increase in neck pain risk with advancing age (Belay *et al.*, 2019). Teachers aged 45 and above had significantly higher odds of developing neck pain, possibly due to wear-and-tear, posture adaptation, and workload accumulation. A systematic review also confirms that older age groups (>40 years) are at elevated risk across global teaching cohorts (Faloye *et al.*, 2024).

Teaching-Specific Factors

Teaching is ergonomically demanding. Teachers often stand or sit for extended periods, mark papers in head-down positions, or lecture without breaks—leading to cumulative cervical strain. Teachers with more than 10 years in the

profession also had increased prevalence, suggesting cumulative ergonomic stress (Wang *et al*, 2023).

Key occupational risk factors in teaching include

- a. Prolonged Standing/Sitting: Long classroom sessions without breaks increase postural strain.
- b. Head-down posture: Especially during marking, reading, and writing on boards—places mechanical load on the cervical spine.
- c. Repetitive Arm Elevation: Writing on chalkboards or whiteboards repeatedly increases shoulder and neck loading.

2.6 DIAGNOSIS OF NECK PAIN

The diagnosis of neck pain, particularly in occupational groups like teachers, requires a comprehensive clinical approach that considers subjective symptoms, physical examination findings, and where necessary, imaging studies. Neck pain can be classified into specific and non-specific types, with the latter being more common in the general and occupational populations. A detailed clinical history is the first and most important step in diagnosing neck pain. Common symptoms include localized or radiating pain in the neck and shoulders, stiffness or limited range of motion, headache, especially cervicogenic, muscle tenderness or spasms and/or numbness or tingling which suggests nerve involvement (Cleland *et al*, 2017).

2.6.1 Key components of history taking

- a. Onset, duration, and intensity of pain (Cleland *et al*, 2017)
 - b. Occupational history (teaching posture, standing hours, use of digital devices (Cleland *et al*, 2017)
 - c. Previous episodes or trauma (Cleland *et al*, 2017)
 - d. Psychosocial factors (stress, job dissatisfaction, anxiety) (Cleland *et al*, 2017)
- Sleep and exercise habits (Cleland *et al*, 2017)

2.6.2 Physical Examination

The physical exam focuses on identifying muscular, articular, and neurological involvement. Common physical tests include (Walton, 2013):

- a. Inspection and Palpation: Check for tenderness, swelling, and muscle tightness
- b. Range of Motion (ROM): Assess cervical flexion, extension, lateral flexion, and rotation
- c. Spurling's Test: Evaluates for cervical radiculopathy
- d. Neurodynamic Tests: Upper limb tension tests may reveal nerve involvement
- e. Manual Muscle Testing (MMT): Assesses weakness or pain during resistance

2.6.3 Diagnostic Imaging

Imaging is not always required in the absence of red flags, but may be used in cases of suspicion of structural pathology (e.g., disc herniation, fracture),

neurological signs persist or worsen or pain that does not improve with conservative care (American College of Radiology, 2021).

Common imaging tools (American College of Radiology, 2021):

- a. X-rays: Detect spondylosis, degenerative disc disease
- b. MRI: Best for soft tissue, nerve root compression, disc herniation
- c. CT Scans: Detailed imaging for complex cases
- d.** Ultrasound: Used for muscular strain evaluation (rare)

2.6.4 Diagnostic Classification

Neck pain is often classified based on the International Classification of Functioning, Disability and Health (ICF) model, as recommended by physical therapy guidelines

- a. Neck Pain with Mobility Deficits (Cleland *et al*, 2017)
- b. Neck Pain with Movement Coordination Impairments (WAD) (Cleland *et al*, 2017)
- c. Neck Pain with Radiating Pain (Radiculopathy) (Cleland *et al*, 2017)
- d.** Neck Pain with Headache (Cervicogenic) (Cleland *et al*, 2017)

2.7 PREVENTION OF NECK PAIN

Neck pain, especially in occupational groups like teachers, is often preventable through a combination of ergonomic modifications, lifestyle interventions, psychosocial stress management, and routine physical activity. Preventive strategies target modifiable risk factors and aim to reduce the recurrence, severity, and duration of musculoskeletal symptoms.

2.7.1 Ergonomic Interventions

Teachers frequently adopt static postures, prolonged sitting or standing, and awkward neck angles while marking or writing on boards—all contributing to cervical spine strain. Implementing ergonomic changes in the classroom and at home can significantly reduce neck strain (Shariat *et al*, 2018). Effective ergonomic strategies include the use of adjustable chairs and desks, proper positioning of computer monitors and textbooks to avoid neck flexion, frequent position changes (sit-stand cycles), using whiteboards/chalkboards at shoulder height to minimize repetitive overhead reaching (Shariat *et al*, 2018).

Supportive backrests and footrests

A study found that ergonomic training and workspace adjustment significantly reduced musculoskeletal complaints among teachers in Malaysia.

2.7.2 Physical Activity and Exercise

Regular physical activity strengthens postural muscles, improves flexibility, and reduces the likelihood of chronic musculoskeletal pain. Teachers are encouraged to incorporate specific neck and shoulder stretching and strengthening exercises into their routines. Recommended exercises include neck mobility stretches (e.g., chin tucks, side bending), scapular stabilization exercises, postural training and core strengthening, Aerobic exercise (e.g., brisk walking, swimming) 3–5 days per week. Studies reported that Ethiopian teachers who engaged in regular physical activity were significantly less likely to report neck pain (OR = 0.51) (Belay *et al*, 2019).

2.7.3 Education and Training

Educational programs targeting postural awareness, correct body mechanics, and stress management have been shown to effectively reduce the incidence of neck pain in occupational groups. Preventive education may include proper lifting and sitting techniques, microbreaks and stretching during long teaching sessions, training on correct computer use and stress-coping strategies. Participatory ergonomic training programs for teachers improved neck posture awareness and reduced reported pain levels (Shariat *et al*, 2018).

2.7.4 Stress Management and Psychosocial Well-being

Chronic work-related stress contributes to increased muscle tension, poor posture, and pain perception. Therefore, addressing mental health is a critical part of prevention. Psychosocial preventive strategies include mindfulness-based stress reduction (MBSR), adequate rest and work-life balance, access to counseling or employee wellness programs, time management and classroom load redistribution and emphasizes that work-related stress and job dissatisfaction are independent predictors of musculoskeletal disorders in teachers (Faloye *et al*, 2024).

2.8 IMPACT OF NECK PAIN ON TEACHING PERFORMANCE AND QUALITY OF LIFE

Neck pain, especially when chronic, significantly affects both the professional productivity and overall well-being of teachers. Teachers, due to their physically and mentally demanding roles, are especially vulnerable to the

cumulative effects of musculoskeletal disorders, with neck pain being one of the most reported complaints (Belay *et al.*, 2019).

2.8.1 Impact on Teaching Performance

Persistent or recurrent neck pain has been associated with a decline in teaching effectiveness, classroom engagement, and overall productivity. Teachers experiencing neck pain may avoid or reduce blackboard or whiteboard use, exhibit reduced classroom mobility, demonstrate difficulty in concentrating or maintaining enthusiasm. In a study conducted in Malaysia, teachers with musculoskeletal pain including neck pain reported a significant decline in teaching satisfaction and efficiency (Shariat *et al.*, 2018). Neck pain often leads to presenteeism—being physically present at work but performing at suboptimal levels due to discomfort. A study found that musculoskeletal symptoms in teachers led to a decrease in work ability, as measured by the Work Ability Index (WAI) (Yue *et al.*, 2012).

2.8.2 Impact on Quality of Life

Neck pain also significantly impacts physical, emotional, and social well-being. The chronic nature of the pain can lead to sleep disturbances, mood disorders, and reduced participation in social or recreational activities. Common quality-of-life impacts include sleep disruption and fatigue due to pain-related discomfort, emotional distress including irritability, anxiety, and depression. A cross-sectional study in Iran reported that teachers with chronic neck pain scored significantly lower in health-related quality of life (HRQoL) domains, including physical functioning, vitality, and general health perception (Ghaffari *et al.*, 2021).

Table 1: Summary of Analysis of Core Literature on Prevalence of Neck Pain
among Secondary School Teachers in Ilorin.

S/N	AUTHORS	STUDY DESIGN	SAMPLE SIZE	METHODS	LOCATION	RESULTS	DEDUCTION FROM THE FINDINGS
1	Abdul Rahim et al. (2022)	Narrative Review	N/A	Review of literature	N/A (Global focus)	Explored factors associated with musculoskeletal disorders among regular and special education teachers.	Highlights a range of factors contributing to MSDs among teachers.
2	Abdulmonem A et al. (2014)	Cross-sectional Study	Not specified	Not specified	Saudi Arabia	Identified prevalence of musculoskeletal pain and associated factors among female Saudi school teachers.	Female teachers in Saudi Arabia experience significant musculoskeletal pain.
3	Arefi, Saeed, & Dastjerdi (2018)	Cross-sectional Study	Not specified	Not specified	Tehran, Iran	Explored prevalence and risk factors of musculoskeletal disorders among teachers.	Teachers in Tehran are affected by MSDs, with identifiable risk factors.
4	Belay, Alemayehu, & Bihonegn (2019)	Cross-sectional Study	Not specified	Not specified	Ethiopia	Investigated work-related shoulder and/or neck pain among school teachers.	Work environment contributes to shoulder/neck pain in Ethiopian teachers.

5	Blanpied et al. (2017)	Clinical Practice Guideline	N/A	Evidence-based review	N/A (International)	Provides guidelines for neck pain management.	Offers a framework for best practices in treating neck pain.
6	Chong & Chan (2010)	Not specified	Not specified	Not specified	Hong Kong	Studied subjective health complaints of teachers from primary and secondary schools.	Teachers experience various health complaints, including musculoskeletal issues.
7	Coledam et al. (2019)	Cross-sectional Study	Not specified	Not specified	Not specified	Examined factors associated with musculoskeletal disorders and disability in elementary teachers.	MSDs and disability are prevalent among elementary teachers.
8	Converso et al. (2018)	Not specified	Not specified	Not specified	Not specified	Analyzed relationships among relational demands, work meaning, and intention to leave job for preschool teachers with MSDs.	Psychosocial factors can influence MSDs and job satisfaction in preschool teachers.
9	Cleland, Whitman, & Fritz (2017)	Clinical Practice Guideline	N/A	Evidence-based review (ICF model)	N/A (International)	Provides guidelines for diagnosis and management of neck pain.	Offers comprehensive guidance for neck pain assessment and treatment.

CHAPTER THREE

MATERIALS AND METHODS

3.1 PARTICIPANTS

The participants of this study comprised secondary school teachers in 4 secondary schools in Ilorin west, Kwara state.

3.2 PARTICIPANT SELECTION

3.2.1 INCLUSION CRITERIA

Participants must be Secondary school teachers in Ilorin west, Kwara State.

Participants must be at the age range of 23 and above.

Participants must be full-time secondary school teachers employed for certain duration (e.g., at least 1 year of teaching experience).

3.2.2 EXCLUSION CRITERIA

Participants with prior diagnosed spinal disorders.

Participants with a history of spinal surgery.

Pregnant teachers, as pregnancy can influence musculoskeletal health.

3.3 MATERIALS/INSTRUMENT

3.3.1 Instruments

A Neck Disability Index questionnaire is a self-reported questionnaire and was used for this study as it has been widely used and validated in healthcare settings, and it measures a patient's functional disability.

3.3.2 Description of instruments

The Neck Disability Index is a validated self-report questionnaire which took about 15-20 minutes to fill, and aimed to assess the prevalence of neck pain and how it has affects their productivity. The questionnaire consisted of 11 sections; 1 - 11 which addressed the variables of the study.

Section 1 would collect the socio-demographics information of the participants such as age, gender, period of practice for this study:

i. Instructions: This questionnaire has been designed to give us information as to how your neck pain is affecting your ability to manage in everyday life. Please answer by checking ONE box in each section for the statement which best applies to you. We realize you may consider that two or more statements in any one section apply but please just shade out the spot that indicates the statement which most clearly describes your problem.

For each section the total possible score is 5:

If the first statement is marked the section score = 0;

If the last statement is marked, it = 5.

If all 10 sections are completed the score is calculated as follows:

$$\text{Example: NDI score} = \frac{16 \text{ (total scored)}}{50 \text{ (total possible score)}} \times 100 = 32\%$$

If one section is missed or not applicable the score is calculated:

$$\text{NDI score} = \frac{16 \text{ (total scored)}}{45 \text{ (total possible score)}} \times 100 = 35.5\%$$

Minimum detectable change (90% confidence): 10% points (change of less than this may be attributable to error in the measurement)

Section 2 - 11 would contain 6 statements each that help collect information for the level of neck pain.

3.3.3 Psychometric properties

Reliability

The NDI has a fair to moderate test-retest reliability in patients with mechanical neck pain but also for patients with cervical radiculopathy although intra-class correlations can change between 0.50 and 0.98 . These difference may occur because some studies do not separate chronic or acute neck pain or due to the fact that the study only used patients with acute neck pain and the retest-interval was 72 hours (REFERENCES).

Validity

Validity was tested in different trails by comparing NDI with different instruments: e.g VAS, Patient-specific Functional Scale, The Disability Rating Index. They all had strong correlation coefficients suggesting their content is highly comparable: The NDI has a good construct validity. The NDI is seen as a valid tool to measure neck pain and disabilities in patients with neck pain due to acute or chronic conditions (REFERENCES).

3.4 METHODS

3.4.1 Sampling technique

The participants were selected using a convenience sampling technique and only those who give their consent and meet the inclusion criteria were included in this study.

3.4.2 Sample size determination

The sample size was calculated using Taro Yemane formula:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n = Sample size

N = Total Population

e = Margin of error (0.05)

Therefore;

$$n = \frac{105}{1 + 105(0.05)^2}$$

n = 83.2 $\approx$ 83 participants

3.4.3 Research design

A descriptive cross-sectional research design was used in the study

3.4.4 Ethical consideration

Ethical approval was sought and obtained from the Health Research Ethics Committee of the University of Ilorin Teaching Hospital on 26/11/2024, reference no: UITH/CAT/189/VOL.21/831.

3.4.5 Procedure for data collection

Ethical approval was sought and obtained from the Health Research Ethics Committee of the University of Ilorin Teaching Hospital, Kwara state. Consent was first sought verbally from the participants before the questionnaire was administered. Participants were also required to sign the consent form provided in the questionnaire. The participants were also assured of the confidentiality of

their response and all information obtained were stored in a secure place. Participants were based on inclusion criteria. A total of 83 questionnaire was provided for the teachers, 74 of the filled questionnaire was gotten back and 9 were missing on field.

3.5 DATA ANALYSIS

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0 and summarized using descriptive statistics of bar chart, pie chart, percentage mean and standard deviation.

CHAPTER FOUR

RESULTS

4.1 DATA ANALYSIS AND INTERPRETATION

4.1.1 Socio-demographic variables

The socio-demographic characteristics of the participants, as outlined in the dataset, reveal distinct patterns across various variables. Analyzing the age distribution, Table 1 shows that majority of participants (73%) are aged 32 and above, indicating that older individuals make up the majority of the sample. Only 8.1% are between 23–26 years, while 18.9% fall within the 27–31 age range, suggesting limited participation from younger age groups. Overall, the data reflects a strong representation of older participants in the study.

In terms of gender distribution, the analysis shows a notable female dominance among the participants. More of the participants were females, making up 38, which is (51.35%) of the total participants. Male participants account for 48.65%, indicating a lower level of male representation in the study. Overall, the data reflects a gender imbalance, with more female than male participants.

In terms of duration of practice distribution, Fig. 6 shows the period of practice of the participants, revealing that a significant majority—62 out of 74 participants (83.8%) have been practicing for over 10 years. Smaller portions, 9 participants (12.2%), have 1–3 years of experience, while only 3 individuals (4.1%) fall within the 6–9 years range. From the table, it is clear that most participants are highly experienced, indicating a well-practiced group in the study.

Table 2: showing the demographic characteristics of the participants.

	Variables	Frequency	Percentage
1	Age		
	23 -26	6	8.1
	27-31	14	18.9
	32 Above	54	73.0
	Total	74	100.0
2	Gender		
	Male	36	48.65
	Female	38	51.35
	Total	74	100.0
3	Period of Practice		
	1-3	9	12.2
	6-9	3	4.1
	10 Above	62	83.8
	Total	74	100.0

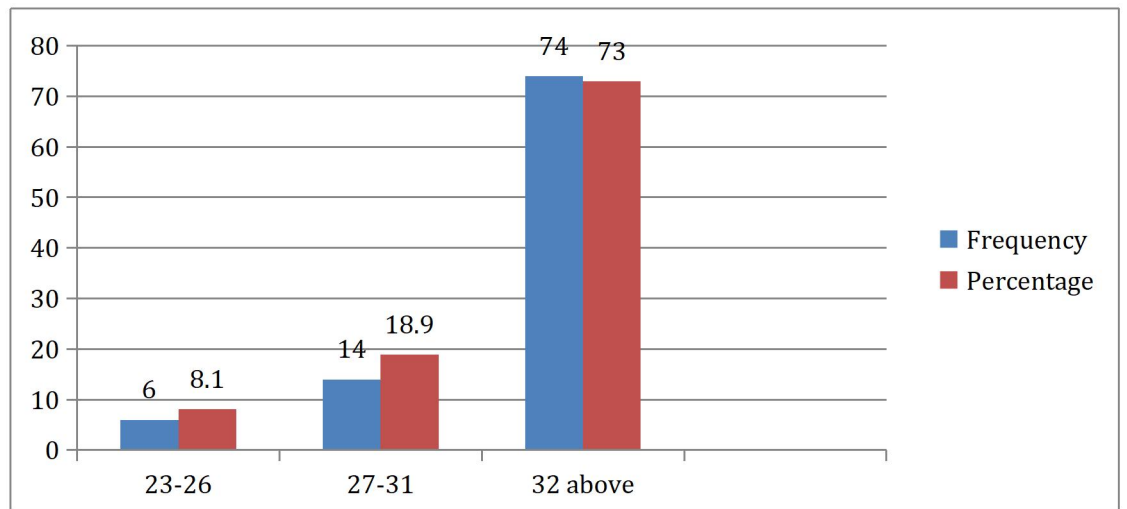


Fig 4: Age of participants

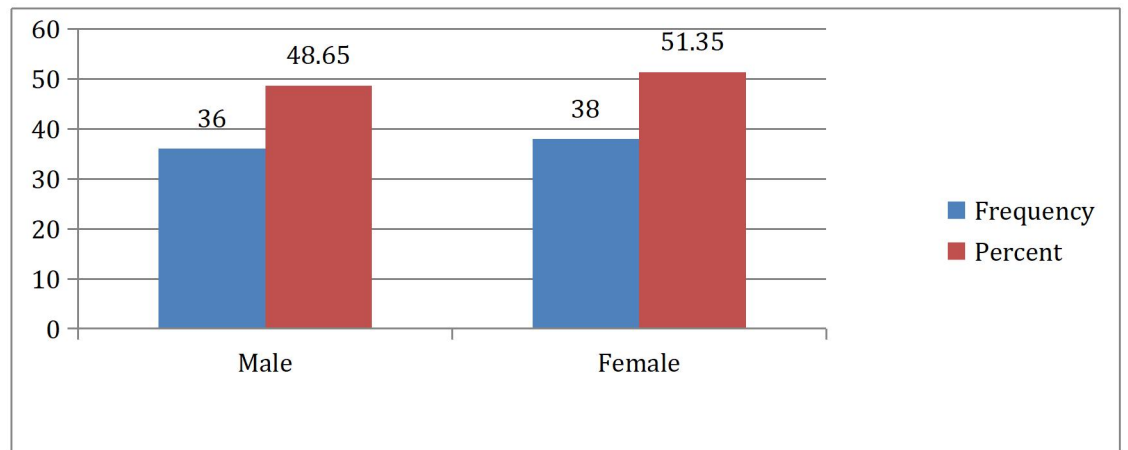


Fig 5: Gender of participants

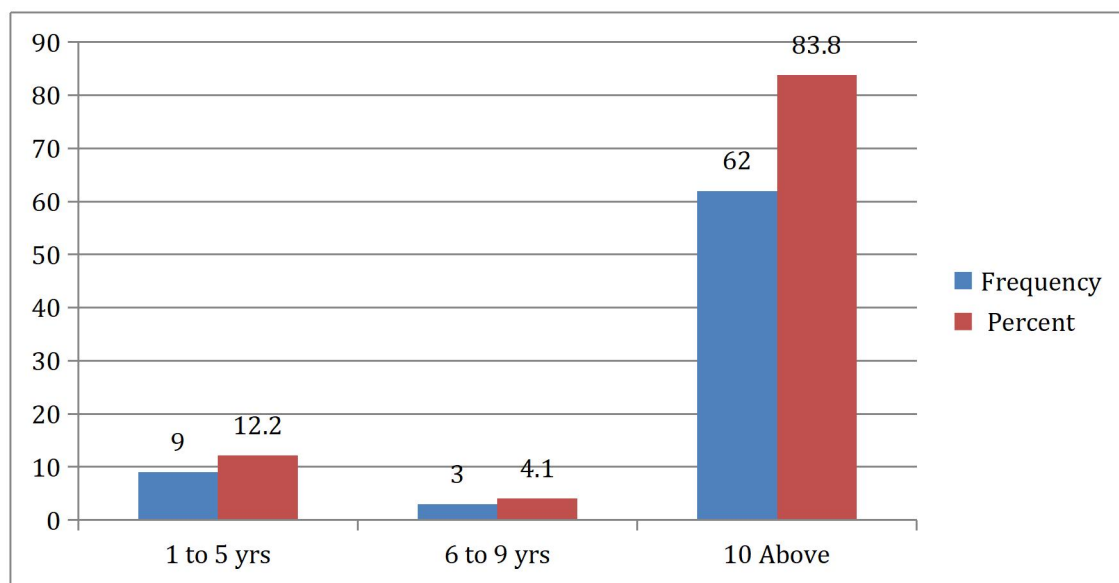


Fig 6: Period of practice of participants

4.2 PREVALENCE OF NECK PAIN

Table 2 displays the pain intensity levels of the participants, with 43.2% (32 participants) reporting no pain at the moment. Another 41.9% (31 participants) experience very mild pain, while 12.2% feel moderate pain. Only 2.7% report fairly severe pain, indicating that most participants have little to no pain.

Table 3 presents data on personal care, showing that 74.3% of participants (55 individuals) can look after themselves normally without causing extra pain. Meanwhile, 16.2% manage personal care normally but with extra pain, and 6.8% do so slowly and carefully due to pain. Only 2.7% need some help, indicating that most participants maintain independence in personal care activities.

Table 4 shows the participants' ability to lift objects, with 27% (20 participants) able to lift heavy weights without extra pain and 37.8% (28 participants) doing so but with added pain. A smaller group (10.8%) can only lift heavy weights if conveniently placed, while 6.8% manage only light to medium weights under similar conditions. Notably, 17.6% can lift only very light weights, showing that lifting ability varies significantly due to pain.

Table 5 presents information on reading ability in relation to neck pain. A majority of the participants (56.8%) can read as much as they want without experiencing any pain, while 29.7% can read freely but with slight pain. Additionally, 10.8% report moderate pain while reading, and only 2.7% are unable to read as much as they would like due to moderate neck pain. This shows that most participants can engage in reading with little to no discomfort.

Table 3: Pain Intensity

Pain Intensity	Frequency	Percent	Valid Percent	Cumulative Percent
I have no pain at the moment	32	43.2	43.2	43.2
The pain is very mild at the moment	31	41.9	41.9	85.1
The pain is moderate at the moment	9	12.2	12.2	97.3
The pain is fairly severe at the moment	2	2.7	2.7	100.0
Total	74	100.0	100.0	

Table 4: Personal Care (Washing, Dressing, etc.)

Personal Care	Frequency	Percent	Valid Percent	Cumulative Percent
I can look after myself normally without causing extra pain	55	74.3	74.3	74.3
I can look after myself normally but it causes extra pain	12	16.2	16.2	90.5
It is painful to look after myself and I am slow and careful	5	6.8	6.8	97.3
I need some help but can manage most of my personal care	2	2.7	2.7	100.0
Total	74	100.0	100.0	

Table 5: *Lifting*

Lifting	Frequency	Percent	Valid Percent	Cumulative Percent
I can lift heavy weights without extra pain	20	27.0	27.0	27.0
I can lift heavy weights but it gives extra pain	28	37.8	37.8	64.9
Pain prevents me lifting heavy weights off the floor, but I can manage if they are conveniently placed.	8	10.8	10.8	75.7
Pain prevents me from lifting heavy weights but I can manage light to medium weights if they are conveniently positioned	5	6.8	6.8	82.4
I can only lift very light weights	13	17.6	17.6	100.0
Total	74	100.0	100.0	

Table 6: *Reading*

Reading	Frequency	Percent	Valid Percent	Cumulative Percent
I can read as much as I want to with no pain in my neck	42	56.8	56.8	56.8
I can read as much as I want to with slight pain in my neck	22	29.7	29.7	86.5
I can read as much as I want with moderate pain in my neck	8	10.8	10.8	97.3
I can't read as much as I want because of moderate pain in my neck	2	2.7	2.7	100.0
Total	74	100.0	100.0	

Table 6 shows the frequency and severity of headaches among participants. The largest group, 45.9%, experience slight headaches infrequently, while 24.3% report having no headaches at all. Additionally, 23% have moderate headaches that come infrequently, and only 6.8% suffer from moderate headaches frequently, indicating that most participants experience little to no serious headache issues.

Table 7 highlights the participants' ability to concentrate, with 66.2% (49 individuals) reporting full concentration with no difficulty. Another 24.3% can concentrate fully but with slight difficulty, while 6.8% experience a fair degree of difficulty. Only 2.7% face a lot of difficulty, showing that the majority have little to no trouble concentrating.

Table 8 presents data on participants' work capacity, showing that 67.6% (50 individuals) can do as much work as they want to. Another 27% can only manage their usual work but not beyond, while 5.4% can do most of their usual work with limitations. This indicates that the majority of participants maintain full work ability despite any challenges.

Table 9 shows that 70.3% of participants (52 individuals) can drive without any neck pain, indicating a high level of comfort while driving. Additionally, 18.9% experience slight pain, and 6.8% report moderate pain when driving. Only 4.1% are unable to drive at all, suggesting that the majority of participants can drive with little to no difficulty.

Table 7: Headaches

Headaches	Frequency	Percent	Valid Percent	Cumulative Percent
I have no headaches at all	18	24.3	24.3	24.3
I have slight headaches, which come infrequently	34	45.9	45.9	70.3
I have moderate headaches, which come infrequently	17	23.0	23.0	93.2
I have moderate headaches, which come frequently	5	6.8	6.8	100.0
Total	74	100.0	100.0	

Table 8: Concentration

Concentration	Frequency	Percent	Valid Percent	Cumulative Percent
I can concentrate fully when I want to with no difficulty	49	66.2	66.2	66.2
I can concentrate fully when I want to with slight difficulty	18	24.3	24.3	90.5
I have a fair degree of difficulty in concentrating when I want to	5	6.8	6.8	97.3
I have a lot of difficulty in concentrating when I want to	2	2.7	2.7	100.0
Total	74	100.0	100.0	

Table 9: *Work*

Work	Frequency	Percent	Valid Percent	Cumulative Percent
I can do as much work as I want to	50	67.6	67.6	67.6
I can only do my usual work, but no more	20	27.0	27.0	94.6
I can do most of my usual work, but no more	4	5.4	5.4	100.0
Total	74	100.0	100.0	

Table 10: *Driving*

Driving	Frequency	Percent	Valid Percent	Cumulative Percent
I can drive my car without any neck pain	52	70.3	70.3	70.3
I can drive my car as long as I want with slight pain in my neck	14	18.9	18.9	89.2
I can drive my car as long as I want with moderate pain in my neck	5	6.8	6.8	95.9
I can't drive my car at all	3	4.1	4.1	100.0
Total	74	100.0	100.0	

Table 10 presents information on participants' sleep patterns, with 47.3% (35 individuals) reporting no trouble sleeping. Another 25.7% experience slight disturbance (less than 1 hour sleepless), while 13.5% each report mild (1–2 hours) and moderate (2–3 hours) sleep disturbances. This indicates that while nearly half sleep well, a notable portion experience varying levels of sleep disruption.

Table 11 shows that 63.5% of participants (47 individuals) can engage in all recreational activities without any neck pain. Another 31.1% participate fully but with some neck pain, while 5.4% are limited and can only engage in most, not all, of their usual activities. The result indicates that the majority maintain an active recreational lifestyle with little or no discomfort.

4.3 NDI SCORE AND PREVALENCE OF NECK PAIN/DISABILITY

Table 12 shows the overall distribution of neck disability in the participants with the majority falling into 23 No disability (31.10%), 27 Mild disability (36.50%) and 20 Moderate disability (27.0%) categories and 4 severe disability (5.40%), no participants exhibit complete disability (0.0%). 27 participants (36.50%) showed a prevalence of mild disability.

Table 11: *Sleeping*

Sleeping	Frequency	Percent	Valid Percent	Cumulative Percent
I have no trouble sleeping	35	47.3	47.3	47.3
My sleep is slightly disturbed (less than 1 hr sleepless)	19	25.7	25.7	73.0
My sleep is mildly disturbed (1-2 hrs sleepless)	10	13.5	13.5	86.5
My sleep is moderately disturbed (2-3 hrs sleepless)	10	13.5	13.5	100.0
Total	74	100.0	100.0	

Table 12: *Recreation*

Recreation	Frequency	Percent	Valid Percent	Cumulative Percent
I am able to engage in all my recreation activities with no neck pain at all	47	63.5	63.5	63.5
I am able to engage in all my recreation activities, with some pain in my neck	23	31.1	31.1	94.6
I am able to engage in most, but not all of my usual recreation activities because of pain in my neck	4	5.4	5.4	100.0
Total	74	100.0	100.0	

Table 13: *Distribution of Neck Disability in number of participants*

Disability Level	Number of Participants	Percentage of Total
No Disability	23	31.10%
Mild Disability	27	36.50%
Moderate Disability	20	27.00%
Severe Disability	4	5.40%
Complete Disability	0	0.00%
Total	74	100.00%

Table 13 shows the 20-29 age group shows the highest proportions of no disability (38.9%) and mild disability (38.9%), indicating less severe neck disability in younger participants. As age increases, there is a trend towards a higher proportion of moderate disability and severe disability. The 50-59 age group has the highest percentage of severe disability (16.7%). Complete disability was not observed in any age group. Therefore the average NDI percentage score generally increases with age, with the 50-59 age group showing the highest average NDI score (29.83%).

Table 14 males shows a slightly higher percentage of no disability (33.3%) and mild disability (38.9%) compared to females. Females show a higher proportion of moderate disability (31.6%) compared to males (22.2%). The percentage of severe disability is almost identical for both genders (5.3% for females, 5.6% for males). No complete disability was observed in either gender. The average NDI percentage scores for females (25.53%) and males (25.17%) are very similar, suggesting no significant difference in overall disability levels between genders in this sample.

Table 15 shows the 0-5 years of practice group continues to show the highest proportion of no disability (37.5%) and mild disability (37.5%), along with the lowest average NDI score, suggesting less neck disability in newer teachers. As the period of practice increases, the proportion of no disability tends to decrease, while mild and moderate disabilities become more prevalent. The 11-15 years group has a higher percentage of severe disability (11.1%) compared to the 0-10 year groups. The 16-20 years group stands out with the highest proportion of Severe disability (30.0%), which is significantly higher than

other groups. This strongly supports the idea that prolonged practice periods are associated with a higher risk of developing more severe neck disability.

Table 14: Age distribution with Neck Disability

Age Group	Number of Participants	Average NDI (%)	No Disability (%)	Mild Disability (%)	Moderate Disability (%)	Severe Disability (%)	Complete Disability (%)
20-29	18	21.33	38.90%	38.90%	22.20%	0.00%	0.00%
30-39	24	26.5	29.20%	33.30%	33.30%	4.20%	0.00%
40-49	20	25.4	25.00%	35.00%	35.00%	5.00%	0.00%
50-59	12	29.83	25.00%	33.30%	25.00%	16.70%	0.00%
Total	74						

Table 15: Gender distribution with Neck disability

Gender	No. of Participants	Average NDI (%)	No Disability (%)	Mild Disability (%)	Moderate Disability (%)	Severe Disability (%)	Complete Disability (%)
Female	38	25.53	28.90%	34.20%	31.60%	5.30%	0.00%
Male	36	25.17	33.30%	38.90%	22.20%	5.60%	0.00%
Total	74						

Table 16: *Period of practice with distribution of Neck disability*

Period of Practice	Number of Participants	Average NDI (%)	No Disability (%)	Mild Disability (%)	Moderate Disability (%)	Severe Disability (%)	Complete Disability (%)
0-5	24	22.33	37.50%	37.50%	25.00%	0.00%	0.00%
6-10	22	26.55	27.30%	36.40%	31.80%	4.50%	0.00%
11-15	18	26.89	22.20%	33.30%	33.30%	11.10%	0.00%
16-20	10	27.6	20.00%	30.00%	20.00%	30.00%	0.00%
Total	74						

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 DISCUSSION

The demographic distribution of participants in this study reflects a population composed primarily of secondary school teachers, with a majority being older individuals, female and the prevalence of neck pain/disability in more experienced participants. This demographic pattern is common in teachers and aligns with reports by (Fahmy *et al*, 2022), who emphasized neck pain being the most prevalent work-related musculoskeletal disorders. Older participants, particularly with more years of experience, have been shown to be more susceptible to neck pain/disability.

Moving to the core problem of neck pain, the study observed a widespread experience of pain among female, older and more experienced participants, though generally at moderate to severe disability. This trend reflects global findings reported by (Erick *et al*, 2014), which noted female gender, increasing age, long working hours, history of injury, and frequent head down posture are some of the risk factors that have been associated with development of neck pain among them. The widespread, though mild to-severe, nature of the pain among secondary school teachers may be indicative of early to late stage musculoskeletal strain that accumulates over time due to poor ergonomics, repetitive movements, and insufficient preventive education.

Beyond physical stressors, psychological factors, including anxiety and stress, are recognized as significant contributors to musculoskeletal pain, including neck pain, among teachers. According to (Yue *et al*, 2016), the impact of neck pain extends beyond physical discomfort, leading to considerable implications for teaching performance and overall quality of life. Neck pain can result in absenteeism, reduced productivity, and decreased job satisfaction. It can also manifest as "presenteeism," where teachers are physically present but perform below optimal levels due to discomfort, affecting student engagement and academic outcomes. Furthermore, chronic neck pain can severely impact a teacher's quality of life by causing sleep disturbances, emotional distress, and reduced participation in social and recreational activities.

This research contributes to the growing body of literature emphasizing the importance of workplace health and safety in the education sector. Understanding these prevalence patterns and risk factors is critical for developing evidence-based strategies to promote teacher well-being, such as ergonomic training, encouraging regular physical activity and breaks, and implementing stress management programs. Ultimately, fostering a healthier and more supportive work environment for teachers can have a profound positive impact on their well-being, job satisfaction, and consequently, on student outcomes and the education system as a whole.

5.2 CONCLUSION

This project successfully investigated the prevalence of neck pain and its associated risk factors among secondary school teachers in Tanke district, Ilorin, Kwara State. The study affirmed that neck pain is a prevalent concern

within this population, influenced by factors such as gender, age and period of teaching practice. These findings align broadly with existing international literature, while simultaneously providing critical localized data relevant to the Nigeria. The presence of neck pain has demonstrable impacts on the well-being and professional functioning of teachers. Consequently, addressing this occupational health issue is paramount for fostering a healthier teaching workforce, enhancing educational delivery, and ultimately contributing to the improved quality of education.

5.3 RECOMMENDATIONS

Based on the findings, the study recommends that:

1. There is a need to incorporate occupational health education into teacher training programs to raise awareness about musculoskeletal risks in the profession.
2. There is a need to implement regular ergonomic training for teachers to promote proper posture and spinal health awareness in schools.
3. There is a need to provide ergonomic classroom furniture, including adjustable chairs and desks, to reduce strain on the spine during teaching activities.
4. There is a need to introduce routine spinal health screenings for early detection and management of neck pain among teachers.
5. There is a need to encourage periodic physical activity and stretching breaks during the school day to reduce the impact of prolonged static postures.

6. There is a need to establish workplace health policies that limit excessive standing hours and promote job rotation or mixed teaching methods.

5.3.1 Suggestion for Further Studies

1. Future research could compare the prevalence of neck pain among teachers with other professions such as bankers, drivers, and office workers within Ilorin or other districts.
2. A long-term follow-up study can be conducted to observe how neck pain develops and progresses among teachers over time.
3. Future studies should explore the impact of workplace ergonomic interventions, physical exercise programs, or posture correction training on reducing the incidence and severity of neck pain among teachers.
4. Intervention-based studies should evaluate the effectiveness of ergonomic and physical health programs in preventing neck pain among educators.
5. Studies should investigate the influence of psychosocial stressors, such as job strain and mental fatigue, on the development of neck pain.
6. Research should explore how neck pain impacts teachers' productivity, classroom performance, and overall quality of education delivery.

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APPENDIX A

ETHICAL APPROVAL

UNIVERSITY OF ILORIN TEACHING HOSPITAL

Chairman:

Chief Medical Director:

PROF. YUSSUF ABDULLAH D.
(MB; BS, FMC Psych., Cert. Health Plan. & Mgt.,
Cert. Health Inform. Mgt., MCH, FIIA, FAPA, FCAI)

Ag. Chairman Medical Advisory Committee:

PROF. BILIAMINU S.A.
(MB; BS, (Ilorin), FMCPath;
Cert. in Clin. Embryology (Chennai).

Director of Administration:

MR. A.F. AGBANA
B.Sc., M.Sc., FCAI, MACHE, MIHM, AHAN.



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Our Ref **UITH/CAT/189/VOL.21/831**

Date: **26/11/2024**

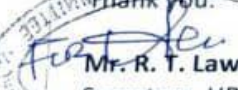
Abifarin Toluwanimi Olamide
Dept. of Physiotherapy,
Faculty of Health Sciences,
Thomas Adewumi University
Oko
Kwara State.

APPROVAL TO COLLECT DATA FROM THE HOSPITAL

Please refer to your application on the above subject matter.

I am directed to convey Management's approval of your request to collect data from the Hospital. You are please requested to use the data strictly for the purpose stated in your application.

Dr. Akinwale S.G is to give close supervision to this study.

Thank you.

Mr. R. T. Lawal
Secretary, HREC

APPENDIX B

INFORMED CONSENT FORM

Dear participants,

My name is ABIFARIN TOLUWANIMI OLAMIDE, a final year student of Physiotherapy department, Faculty of Basic Medical and Health Sciences, Thomas Adewumi University. I am conducting a research titled “PREVALENCE OF NECK PAIN IN SECONDARY SCHOOL TEACHERS IN TANKE, ILORIN, KWARA STATE”. I will provide a Questionnaire that would require you to fill in some of your personal bio data, and other Research-appropriate data. It is hoped that the data obtained from this study would guide the determination of the prevalence of neck pain in secondary schools in Tanke, Ilorin. The data supplied in this questionnaire will only be utilized for the research purpose. Kindly read the instructions carefully and answer each question as honestly and accurately as you can. It is your right to either accept or refuse to participate in this study. Please don't hesitate to ask questions or seek clarifications if you have any worries about this research; we would be ready to answer them.

I _____ hereby

testify that I have been fully informed about the research and what it entails. I therefore consent to be part of this research as a participant and promise to cooperate and be committed up to the end of the research.

Researcher's Signature

Participants's signature

APPENDIX C

QUESTIONNAIRE

Demography

Age:

Gender: M / F

Period of practice: _____ [Weeks] [Months] [Years] (e.g 1wk, 2mths or 3yrs)

Are you a registered teacher? Yes / No

Other jobs {that require manual labor}:

Underline the school you work in: Chapel Secondary School/BTTR Secondary School/Emmanuel Baptist Secondary School/Government Secondary School

Neck Disability Index

THIS QUESTIONNAIRE IS DESIGNED TO HELP US BETTER UNDERSTAND HOW YOUR **NECK PAIN** AFFECTS YOUR ABILITY TO MANAGE EVERYDAY -LIFE ACTIVITIES. PLEASE MARK IN EACH SECTION THE **ONE BOX** THAT APPLIES TO YOU. ALTHOUGH YOU MAY CONSIDER THAT TWO OF THE STATEMENTS IN ANY ONE SECTION RELATE TO YOU, PLEASE MARK THE BOX THAT **MOST CLOSELY** DESCRIBES YOUR PRESENT -DAY SITUATION.

SECTION 1 - PAIN INTENSITY

- ☐ I have no neck pain at the moment.
- ☐ The pain is very mild at the moment.
- ☐ The pain is moderate at the moment.
- ☐ The pain is fairly severe at the moment.
- ☐ The pain is very severe at the moment.
- ☐ The pain is the worst imaginable at the moment.

SECTION 2 - PERSONAL CARE

- ☐ I can look after myself normally without causing extra neck pain.
- ☐ I can look after myself normally, but it causes extra neck pain.
- ☐ It is painful to look after myself, and I am slow and careful
- ☐ I need some help but manage most of my personal care.
- ☐ I need help every day in most aspects of self -care.
- ☐ I do not get dressed. I wash with difficulty and stay in bed.

SECTION 3 – LIFTING

- ☐ I can lift heavy weights without causing extra neck pain.
- ☐ I can lift heavy weights, but it gives me extra neck pain.
- ☐ Neck pain prevents me from lifting heavy weights off the floor but I can manage if items are conveniently positioned, ie. on a table.
- ☐ Neck pain prevents me from lifting heavy weights, but I can manage light weights if they are conveniently positioned
- ☐ I can lift only very light weights.
- ☐ I cannot lift or carry anything at all.

SECTION 4 – READING

- ☐ I can read as much as I want with no neck pain.
- ☐ I can read as much as I want with slight neck pain.
- ☐ I can read as much as I want with moderate neck pain.
- ☐ I can't read as much as I want because of moderate neck pain.
- ☐ I can't read as much as I want because of severe neck pain.
- ☐ I can't read at all.

SECTION 5 – HEADACHES

- ☐ I have no headaches at all.
- ☐ I have slight headaches that come infrequently.
- ☐ I have moderate headaches that come infrequently.
- ☐ I have moderate headaches that come frequently.
- ☐ I have severe headaches that come frequently.
- ☐ I have headaches almost all the time.

SECTION 6 – CONCENTRATION

- ☐ I can concentrate fully without difficulty.
- ☐ I can concentrate fully with slight difficulty.
- ☐ I have a fair degree of difficulty concentrating.
- ☐ I have a lot of difficulty concentrating.
- ☐ I have a great deal of difficulty concentrating.
- ☐ I can't concentrate at all.

SECTION 7 – WORK

- ☐ I can do as much work as I want.
- ☐ I can only do my usual work, but no more.
- ☐ I can do most of my usual work, but no more.
- ☐ I can't do my usual work.
- ☐ I can hardly do any work at all.
- ☐ I can't do any work at all.

SECTION 8 – DRIVING

- ☐ I can drive my car without neck pain.
- ☐ I can drive my car with only slight neck pain.
- ☐ I can drive as long as I want with moderate neck pain.
- ☐ I can't drive as long as I want because of moderate neck pain.
- ☐ I can hardly drive at all because of severe neck pain.
- ☐ I can't drive my car at all because of neck pain.

SECTION 9 – SLEEPING

- ☐ I have no trouble sleeping.
- ☐ My sleep is slightly disturbed for less than 1 hour.
- ☐ My sleep is mildly disturbed for up to 1-2 hours.
- ☐ My sleep is moderately disturbed for up to 2-3 hours.
- ☐ My sleep is greatly disturbed for up to 3-5 hours.
- ☐ My sleep is completely disturbed for up to 5-7 hours.

SECTION 10 – RECREATION

- ☐ I am able to engage in all my recreational activities with no neck pain at all.
- ☐ I am able to engage in all my recreational activities with some neck pain.
- ☐ I am able to engage in most, but not all of my recreational activities because of pain in my neck.
- ☐ I am able to engage in a few of my recreational activities because of neck pain.
- ☐ I can hardly do recreational activities due to neck pain.
- ☐ I can't do any recreational activities due to neck pain.

PATIENT NAME _____

DATE _____

SCORE _____ [50]

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HVERNON@CMCC.CA

APPENDIX D

RAW DATA

S/N	Age	Gender	Period of practice (E.g 2 weeks, 7 months or 12 years)	Section 1: Pain Intensity	Section 2: Personal Care (Washing, Dressing, etc.)	Section 3: Lifting	Section 4: Reading	Section 5: Headaches	Section 6: Concentration	Section 7: Work	Section 8: Driving	Section 9: Sleeping	Section 10: Recreation
1	2	2	1	1	1	2	1	2	2	1	6	2	1
2	4	1	4	3	3	2	2	1	2	2	2	2	1
3	2	1	1	1	1	5	1	2	1	1	1	1	1
4	4	1	3	1	1	5	1	1	1	1	1	1	1
5	4	2	1	2	2	3	2	4	1	1	1	4	2
6	4	1	4	2	1	2	1	2	2	2	1	4	1
7	4	1	4	1	1	2	1	1	1	1	1	1	1
8	4	2	4	2	1	5	2	2	1	1	2	1	2
9	4	1	4	2	1	3	2	3	1	1	1	3	1
10	4	1	4	1	1	1	1	2	1	1	1	1	1
11	4	1	4	2	2	4	3	3	2	2	3	2	2
12	4	1	4	3	1	2	3	3	3	2	1	3	2
13	3	1	4	2	2	2	2	2	1	1	1	3	2
14	4	2	4	1	1	1	1	2	2	1	1	2	1
15	3	1	4	2	1	1	1	2	1	1	1	1	1
16	4	2	4	2	1	2	1	2	1	2	1	1	2
17	3	2	4	1	1	2	2	2	1	1	2	3	2
18	4	2	4	1	1	5	1	2	1	1	1	1	1
19	4	2	4	1	1	1	1	1	1	1	1	4	1
20	3	1	4	1	1	2	2	3	1	1	1	1	1
21	4	2	4	2	2	1	1	3	1	1	1	4	1
22	4	1	4	1	1	5	1	4	1	2	1	1	1

23	3	2	4	2	1	1	1	1	1	1	1	1	1
24	4	2	4	1	1	1	1	1	1	1	1	1	1
25	3	1	4	2	1	1	2	2	1	1	1	2	1
26	3	1	4	1	1	1	1	1	1	1	1	1	1
27	4	2	4	4	4	4	4	3	4	3	2	2	3
28	4	1	4	2	2	2	1	2	2	2	2	1	2
29	4	2	4	3	3	3	3	3	3	3	3	2	3
30	4	1	4	2	1	2	2	2	2	2	2	2	2
31	4	2	4	3	1	1	1	2	1	1	1	1	2
32	2	2	1	1	1	2	1	2	2	1	6	2	1
33	4	1	4	3	3	2	2	1	2	2	2	2	1
34	2	1	1	1	1	5	1	2	1	1	1	1	1
35	4	1	3	1	1	5	1	1	1	1	1	1	1
36	4	2	1	2	2	3	2	4	1	1	1	4	2
37	4	1	4	2	1	2	1	2	2	2	1	4	1
38	4	1	4	1	1	2	1	1	1	1	1	1	1
39	4	2	4	2	1	5	2	2	1	1	2	1	2
40	4	1	4	2	1	3	2	3	1	1	1	3	1
41	4	1	4	1	1	1	1	2	1	1	1	1	1
42	4	1	4	2	2	4	3	3	2	2	3	2	2
43	4	1	4	3	1	2	3	3	3	2	1	3	2
44	3	1	4	2	2	2	2	2	1	1	1	3	2
45	4	2	4	1	1	1	1	2	2	1	1	2	1
46	3	1	4	2	1	1	1	2	1	1	1	1	1
47	4	2	4	2	1	2	1	2	1	2	1	1	2
48	3	2	4	1	1	2	2	2	1	1	2	3	2
49	4	2	4	1	1	5	1	2	1	1	1	1	1
50	4	2	4	1	1	1	1	1	1	1	1	4	1
51	3	1	4	1	1	2	2	3	1	1	1	1	1
52	4	2	4	2	2	1	1	3	1	1	1	4	1
53	4	1	4	1	1	5	1	4	1	2	1	1	1
54	3	2	4	2	1	1	1	1	1	1	1	1	1
55	4	2	4	1	1	1	1	1	1	1	1	1	1
56	3	1	4	2	1	1	2	2	1	1	1	2	1
57	3	1	4	1	1	1	1	1	1	1	1	1	1
58	4	2	4	4	4	4	4	3	4	3	2	2	3
59	4	1	4	2	2	2	1	2	2	2	2	1	2
60	4	2	4	3	3	3	3	3	3	3	3	2	3
61	4	1	4	2	1	2	2	2	2	2	2	2	2
62	2	2	1	1	1	2	1	2	2	1	6	2	1
63	4	1	4	3	3	2	2	1	2	2	2	2	1
64	2	1	1	1	1	5	1	2	1	1	1	1	1
65	4	1	3	1	1	5	1	1	1	1	1	1	1
66	4	2	1	2	2	3	2	4	1	1	1	4	2
67	4	1	4	2	1	2	1	2	2	2	1	4	1
68	4	1	4	1	1	2	1	1	1	1	1	1	1
69	4	2	4	2	1	5	2	2	1	1	2	1	2
70	4	1	4	2	1	3	2	3	1	1	1	3	1
71	4	1	4	1	1	1	1	2	1	1	1	1	1
72	4	1	4	2	2	4	3	3	2	2	3	2	2

73	4	1	4	3	1	2	3	3	3	2	1	3	2
74	4	1	4	1	1	2	1	1	1	1	1	1	1