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PREVALENCE OF NECK PAIN IN FEMALE DENTAL SURGEONS

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Abstract: Work-related musculoskeletal disorders (WMSDs) are significant health concerns for various professions, including healthcare. Dentists are particularly susceptible due to the repetitive, demanding motions and fixed postures required in their work. This study focuses on assessing the prevalence and intensity of neck pain among female dental surgeons, a group known to be at high risk for musculoskeletal complications.

Methodology: This cross-sectional observational study was conducted over six months, surveying female dental surgeons aged 25-50. A purposive sampling technique was used, with 60 participants included in the study. Data collection involved visiting private dental clinics and administering two questionnaires: the Numerical Pain Rating Scale (NPRS) for neck pain intensity and the Neck Disability Index (NDI) for neck pain-related disability.

Results: Out of the 50 female dental surgeons assessed, 18 (36%) reported experiencing neck pain. The prevalence of neck pain was highest among those aged 36-40 (61.54%). Pain intensity, as measured by the NPRS, showed that 8 dentists reported mild pain, 9 reported moderate pain, and 1 reported severe pain. The NDI results indicated that 10 dentists experienced no disability, 6 had mild disability, and 2 had moderate disability due to neck pain.

Conclusion: The study concluded that neck pain is prevalent among female dental surgeons, with significant variation in pain intensity and functional disability. The findings highlight the need for targeted ergonomic interventions and preventive measures to reduce the risk and impact of neck pain in this professional group.

Keywords: Work-related musculoskeletal disorders, neck pain, female dental surgeons, pain intensity, neck disability, ergonomics.

INTRODUCTION

A work-related musculoskeletal disorder (WMSD) is defined as a musculoskeletal injury resulting from a work-related event, which may lead to loss of work time, work restrictions, or reassignment to another job. In the past, most studies focused on professional hazards such as chemical, biological, and psychosocial workplace hazards. However, over the past decades, musculoskeletal disorders (MSDs) have become increasingly common worldwide. Work-related musculoskeletal disorders are a significant concern for various organizations, including industry, insurance, and healthcare. These disorders, which include pain, weakness, and paraesthesia, are associated with a wide range of occupations, and are often caused by repetitive, uncomfortable, or demanding motions. Among healthcare professionals, dentists are particularly at high risk for developing MSDs due to the nature of their work.(1)

Musculoskeletal complications among dentists are prevalent and well-documented, like other healthcare workers. Most dentists (87.2%) reported experiencing at least one symptom of musculoskeletal diseases in the past year.(2) A study in Greece indicated that 62% of dentists had at least one musculoskeletal complaint, 30% had chronic complaints, and 16% sought medical care. Low back pain is the most prevalent musculoskeletal complaint.(3)

Common MSDs in dentists include back pain from overstrained and uncomfortable postures, as well as neck and shoulder disorders. These issues are exacerbated by the high visual load and fixed postures required in dental practice. If work is performed in uncomfortable postures, it can lead to MSDs.(3)

In the last decade, research has increasingly focused on work-related musculoskeletal injuries, primarily caused by poor ergonomics. Ergonomics is essential in designing workplaces and work practices to match workers' capabilities. Different occupations have unique ergonomic requirements, and MSDs are particularly prevalent among healthcare professionals such as dentists, surgeons, nurses, and physiotherapists.

The spine, or vertebral column, is a segmental set of 33 bones and associated soft tissues in the subcarinal portion of the axial skeleton. It is subdivided into 5 regions based on curvature and morphology: cervical, thoracic, lumbar, sacral, and coccygeal.

The Dental profession is a significant risk factor for neck pain, which often starts early in a dentist's career, even during training. A recent study found that 54.4% of dentists experienced neck pain, with 21.69% considering leaving their jobs as a result. The primary cause of neck pain in dentists is prolonged work postures, which place a high load on the neck and shoulder muscles. Dentists typically work in a seated position with neck flexion, shoulder elevation, and upper extremity abduction, while their patients lie supine.(4)

Neck pain presents a significant socioeconomic burden. Studies estimate the prevalence of neck pain in the adult population to be between 10% and 30%, making it one of the leading causes of disability globally. Neck pain is often classified based on duration (acute, subacute, or chronic) and etiology (eg, mechanical,

neuropathic, rheumatologic). Frequent neck pain is defined as having at least 3 neck pain episodes in a year.(5)

This research aims to investigate the prevalence of neck pain among female dental surgeons, highlighting the specific risk factors and ergonomic challenges they face in their professional practice.

OBJECTIVES

1. To assess the prevalence of prevalence of neck pain among female dental surgeons.
2. To evaluate the neck pain intensity in female dental surgeons.
3. To identify neck pain by neck disability index.

METHODOLOGY

The study was Cross sectional (Observational) study. The study was done in nearby area. The sampling technique was purposive. The sampling size was 60.Study duration was 6 months. Inclusion criteria of individuals were between age group 25-50.Both male and female without any musculoskeletal disease or disorder, any systemic disease or surgery before 6 months.

OUTCOME MEASURE

1. Pain intensity
2. Neck functional disability

PROCEDURE

The researcher visited private dental clinics with a pre-assessment form. After introducing herself and explaining the study's objectives to female dental surgeons, those who agreed to participate answered a single question: "In the past month, have you had neck pain lasting for one day or longer?" Female dentists who responded 'YES' became study participants.

Participants then completed two questionnaires. The first measured neck pain intensity using a Numerical Pain Rating Scale (NPRS) from 0 to 10. The second was the Neck Disability Index, which assessed neck pain-related disability. Both questionnaires were designed to be straightforward. The researcher visited 40 dental clinics and hospitals in Mathura and Vrindavan to collect data on-site.

RESULTS

Demographic Data of the Female Dental Surgeons Assessed is described as below:

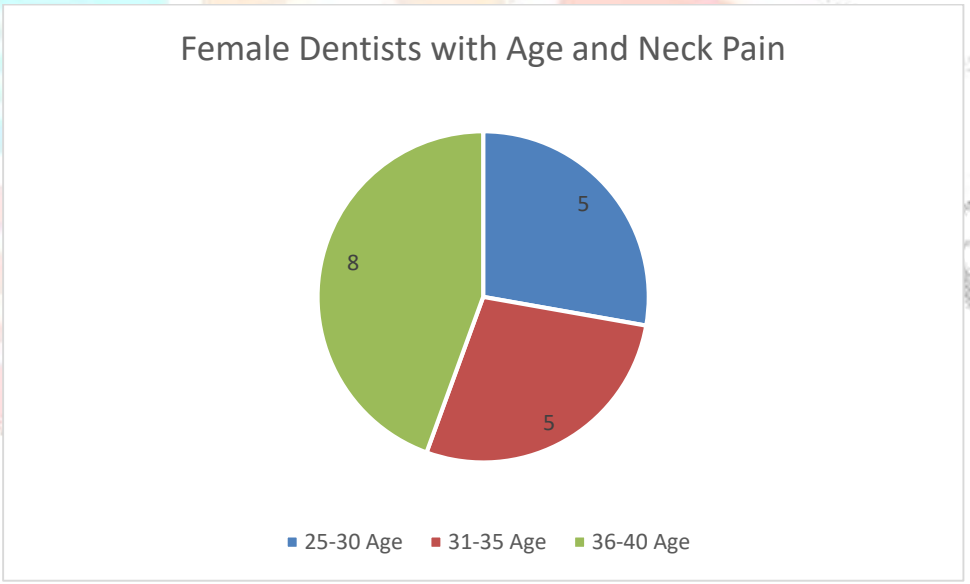
Table 1 Demographic Data of the Female Dental Surgeons

Age	No Pain	Neck Pain	Total
25-30	15	5	20
31-35	12	5	17
36-40	5	8	13

Total Female Dental Surgeons which were having Neck pain were 18 out of 50 patients assessed.

A contingency table to show the distribution of Neck pain

Figure 1 Age and Neck pain



The overall prevalence of neck pain was found to be high among the female dentists.

Table 2 Age wise Prevalence Rate

Age	Neck Pain	Total	Prevalence Rate
25-30 Age	5	20	25%
31-35 Age	5	17	29.41%
36-40 Age	8	13	61.54%

Figure 2: Intensity of Neck pain

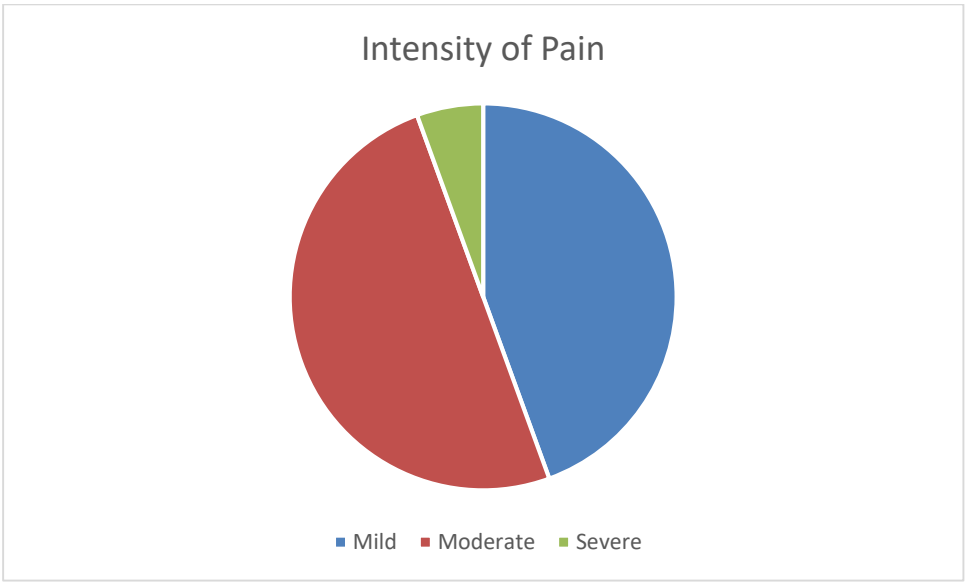
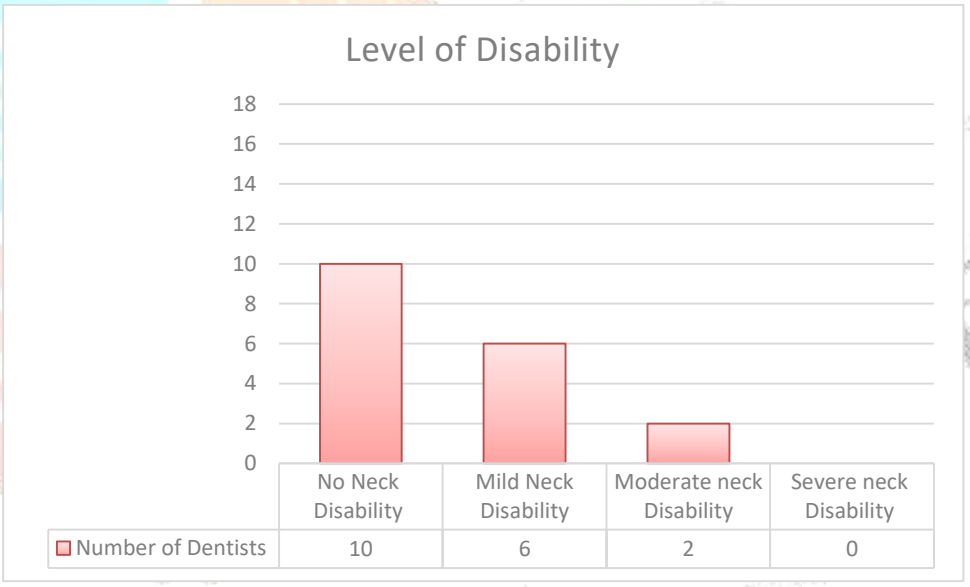


Figure 3 Level of Disability



CONCLUSION

The neck pain is prevalent in the Female dental surgeon.

DISCUSSION

The present study aimed to assess the prevalence and characteristics of neck pain among female dental surgeons from January 2024 to June 15, 2024. Surveying 50 female dental surgeons, 18 (36%) reported experiencing neck pain. This prevalence aligns with previous studies reporting rates of 30% to 65% (Alexopoulos et al., 2004; Hayes et al., 2009; Leggat & Smith, 2007). (6–8) Neck pain prevalence varied by age: 33% in the 25-30 age group, 29% in the 31-35 age group, and 61% in the 36-40 age group. These findings are consistent with studies showing increased musculoskeletal disorders with age due to cumulative strain and degeneration (Rafie et al., 2018; Leggat et al., 2008) .(9,10) Using the Numeric Pain Rating Scale (NPRS), 8 out of 18 dentists reported mild pain (scores 1-3), 9 reported moderate pain (scores 4-6), and 1

reported severe pain (score 7). This distribution mirrors other studies suggesting that neck pain among dental practitioners is generally mild to moderate (Gandolfi et al., 2020). (11) The Neck Disability Index (NDI) indicated that among the dentists with neck pain, 10 experienced no disability, 6 had mild disability, and 2 had moderate disability. This distribution supports findings that neck pain in dental professionals typically results in low to moderate disability (Alghadir et al., 2015). (12) Future research should focus on longitudinal studies to track neck pain progression and intervention studies to assess ergonomic and preventive measures' effectiveness (Pîrvu et al., 2014) .(13)

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