Understanding Dental Pain: Cross-sectional Analysis of Pain Intensity and Associated Factors using Visual Analogue Scale

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ABSTRACT

Pain is a multifaceted experience that can vary based on an individual's threshold and perception and can be acute or chronic, depending on the nature and type of pain experienced. This study evaluated the efficacy of Visual Analogue Scale in assessing dental pain among 153 dental patients in Pakistan region. The study found that Visual Analogue Scale provides a useful and straightforward method for assessing pain intensity among dental patients undergoing various therapies. These findings may help dental healthcare providers improve pain management strategies and patient outcomes. However, a comprehensive approach to pain assessment and management beyond pain intensity ratings using Visual Analogue Scale is essential. Future studies should explore other dimensions of pain and identify optimal pain management strategies in dental settings.

Keywords: Dental Pain, Visual Analogue Scale.

I. INTRODUCTION

Pain is a sensory and emotional experience that is unpleasant that is related to or resembles that which is related to, actual or potential tissue damage [1].

Dental Pain is the most common chief complaint of patients reporting to the dental outpatient department [2]. Different causes can be attributed to dental pain, but dental caries is considered the main cause. This type of pain results from pulpsitis due to bacterial ingress. Among dental caries other routes of microbial ingress are dentinal cracks, trauma, exposed dentin tubules, and main apical aperture [3]. Some of the conditions leading to dental pain other than pulpsitis can be periodontitis [4] and pulpsitis [5], increased tooth sensitivity due to loss of tooth structure (dental wear) [6].

Dental pain is a health condition that can lead to significant morbidity and high utilization of healthcare services. It can limit the ability to eat certain foods and enjoy meals, as well as cause social isolation and disruptions in daily routines. Pain is also a critical indicator of potential impairment in the quality of life related to oral health. The prevalence of orofacial and dental pain is population dependent and prevalence of 18.5–58.8% has been reported by various studies worldwide. Visual Analogue Scale is used to measure the intensity of perceived pain and discomfort by a patient first used by Hayes and Patterson [7], [8].

Among different forms of visual analog scales, the Numerical Rating Scale which is an 11-point numeric scale with zero representing one end and 10 representing another end for measurement was found to be most effective tool for pain assessment [9], [10].

II. MATERIALS AND METHODS

Data was collected through cross-sectional study of 153 dental patients who had visited Dental Hospitals or Dental Clinics in Pakistan.

Inclusion Criteria:
- Age limit from 7 to 71 years,
- Competent Men, Women and Children,
- Resident of Pakistan,
- Visited any Pakistani Dental Clinic or Hospital.

Exclusion Criteria:
- Age below 7 years or above 71 years,
- Mentally incompetent Men, Women or Children,
- Non-resident of Pakistan,
- Visited a Clinic or Hospital for the chief complaint outside Pakistan.

Patients were divided into Three groups on basis of Age and each group was further subdivided into two groups such as:
- Group I: 07 - 21 Years,
- Group II: 22- 35 Years,
- Group III: 36- 71 Years,
- Group A: Men,
- Group B: Women.

Data collection was done during the month of April-May 2023 both through an online questionnaire as well as through printed questionnaire papers distribution. Patients were asked to grade their pain on visual analogue scale (VAS) providing an evaluation of pain intensity that they perceived. The visual analogue scale (VAS) is a line approximately 10 mm in length with each end anchored by extreme pictorial (e.g., no...
pain, moderate pain and extreme pain) Patients were asked to make a mark or select a number from three options as 0-3, 4-7, and 8-10 on the line that represented their level of perceived pain intensity. According to Age, Gender, and arch, the mean Visual Analogue Pain scale was assessed.

III. RESULTS

According to age groups, the frequency of Severe pain assessed on Visual Analogue Scale in Group I was recorded as 22.50%, in Group II the frequency was 24.24% and in Group III it was recorded as 28.57% (Fig. 1).

According to disease condition, the percentage was highest for Reversible Pulpitis condition having 9.80% Severe Pain, followed by Irreversible Pulpitis condition having frequency of 7.18% Severe Pain (Fig. 2).

According to Gender, the Frequency of pain perceived by individuals on Visual Analogue Scale showed Women showed more Severe Dental Pain of 29.8% in comparison to Men which showed a frequency of 19.76% (Fig. 3).

According to Tooth Number, Severe Pain of Lower 6 teeth was highest among all with a Frequency of 7.84% followed by Upper 8 tooth with Severe Pain prevalence of 2.61% (Fig. 4).
IV. DISCUSSION

Since the most important factor due to which a patient visits a dental clinic is pain, that is why the evaluation of pain intensity before and after the treatment becomes the basis of patient satisfaction in addition to other factors [11]–[15]. In this study we found out that the prevalence of severe pain was more prevalent among group III patients, then in group II and the least in group I. Female were having more patients with severe pain than male patients. Surprisingly the lower 6th was found to have the highest number patients with severe pain followed by upper 8th. But with regards to diagnosis, many patients with severe pain had reversible pulpitis followed by irreversible pulpitis. Although these findings seem rather neat patients with severe pain had reversible pulpitis followed by irreversible pulpitis. Although these findings seem rather neat and defined, the nature of pain is not [12]–[14]. There are many factors that affect pain perception such as emotional, psychological, and environmental etc., so we need more than one assessment tool for pain assessment and the main limitation factor of this study is that it is relying on a single index.

V. CONCLUSION

The knowledge about pain is yet still not a fully solved mystery[16]–[19], so in our journey of finding an objective tool for assessing pain intensity we had conducted this study, so that we can gain further knowledge on how visual analogue scale can work as a pain assessing tool. Assessing pain correctly would drastically change our clinical practice, patient satisfaction and a measure for a successful treatment. There still yet a lot of work left to do in this field of trying to gain more knowledge about the nature of pain.

REFERENCES


