

PRE AND POST-OPERATIVE DENTAL PAIN AND ANXIETY IN PATIENTS UNDERGOING ROUTINE DENTAL EXTRACTION, PESHAWAR

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ABSTRACT:

OBJECTIVES:

To determine the pre and post-operative dental pain intensity and dental anxiety in patients undergoing tooth extraction and providing counselling with dental treatments.

METHODOLOGY:

It was a comparative study conducted in dental hospitals of Peshawar i.e. Sardar Begum Dental College and Khyber College of Dentistry. A total of 200 participants were selected for this study through simple random sampling technique. Half of the participants (N=100) received dental treatment with counselling, whereas half participants (N=100) got only dental treatment. Informed consent was taken from the participants. Both genders having an age range of 18-60 years were included in the study. Those patients who have severe or other associated dental/medical problems were excluded from the study. Modified Wisconsin Brief Pain Questionnaire and Dental Anxiety Scale-Revised were used for data collection. Both questionnaires have high reliability and validity. The patients were counselled from time to time during the tooth extraction procedure to reduce their anxieties and divert their mind from dental tools and pain. The data was analysed using SPSS 22.0 version.

RESULTS:

The outcome of the study showed that the pain severity and dental anxiety was reduced in the patients taking dental treatment along with counselling after the dental extraction as compared to the patients having only dental treatment. Pain inference also improved after tooth extraction.

CONCLUSION:

Dentists should need to learn counselling skills to provide relief to patients from dental pain and anxiety. Patients suffering from dental pain or diseases also require some psychological interventions along with dental treatments.

KEYWORDS: Dental Extraction, Pain, Dental Anxiety, Anaesthesia, Counselling

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INTRODUCTION:

Tooth extraction or dental extraction is a process of pulling teeth from its socket (dental alveolus). Periodontal diseases, tooth decay and dental trauma are the common reasons for dental extraction especially when they are associated with toothache where restoration of teeth is not possible¹. There are two types of dental extraction i.e. surgical and non-surgical/simple. Post-extraction risks include swelling, pain, infection, bruising and bleeding. However, surgical post-extractions risks can be of high intensity, complicated and more painful. Anticoagulant drugs, prescribing antibiotics and evaluating the nerve damage risks are the pre-dental extraction measures². The dentists must manage post-extraction complications immediately to provide relief to the patients and minimize the risks of other dental problems³. The periodontal therapy aim is to improve the wellbeing of dental patients through maintaining the natural dentition in optimal conditions, whereas dental extraction is inevitable under certain circumstances that subsequently require the consideration of tooth

replacement options⁴. Among them, fixed dental prostheses are regarded as a highly predictable and therapeutically versatile alternative, also associated with long-term patient quality of life. However, tooth or implant-supported cannot fully replace all the inherent functions and properties of natural teeth⁵. At dental hospitals mostly patients present with complaints of pain, which is a complicated and personal experience. People have different pain thresholds, which provide a basis for measuring the pain intensity. In dental clinical practice, assessment of pain is the routine procedure for which different tools are developed and dentists are using it⁶. The gold standard for measuring pain intensity is patient self-reports⁷. Most of the researches were done to minimize post-operative pain. Mostly non-steroidal anti-inflammatory drugs, opioids and both are used to treat and control dental post-operative pain⁸. Inflammation plays a vital part in wound healing and facial swelling or inflammation can lead to pain⁹. In dentistry anxiety and apprehension of fear can be seen by the patients in routine checkups. Almost 1/7 patients in western countries experience maximum anxiety during dental treatment¹⁰. The reasons can be due to the belief system of patients that they would have a painful experience¹¹ and having a history of painful experiences during dental procedures¹². Oosterink et al, in their study, analyzed sixty-seven odontological conditions, in 1st place

who stand out were due to anxiety of oral surgery whereas anxiety of dental extraction was in 5th place¹². Patients previous experiences helps to understand their state of anxiety, fear and pain. The patient having a maximum level of fear/anxiety will perceive and recall the treatment as more intense or painful as compared to patients having minimum anxiety or fear¹³. The notion will reinforce that such patient will comply with treatment over time, primarily attainment of additional interventional treatments. In conservative treatments such as root canal treatment, patients are also found to have higher expectations of pain than they feel afterwards during treatment¹⁴. To the best of our knowledge, this is the first study that presents the analysis of pain experience before and after routine, uncomplicated tooth extraction with and without counselling. Everyone experience"s fear and anxiety before tooth extraction along with pain, anxiety not only produces emotional unease but may also provoke patient behavior that hinders procedure, in some cases prolonging the intervention and complicating post-operative pain¹⁵

METHODOLOGY:

A comparative research study was done to assess pre and post-operative dental pain in patients undergoing routine dental extraction and dental anxiety. It was conducted in the dental hospitals of Peshawar. The sample size was selected through simple random sampling method and a total of 200 patients

participated in this study. 100 participants received dental treatment with counselling, whereas 100 participants were given only dental treatment. Informed consent was taken from the patients and well-developed questionnaires were used to collect the data i.e. Modified Wisconsin Brief Pain Questionnaire and Dental Anxiety Scale-Revised. Modified Wisconsin Brief Pain Questionnaire has two sub-scales; one is for measuring pain severity and second is to assess pain interference. The pain interference scales further evaluate the general activity, mood, walking ability, normal work, relations with other people, sleep and enjoyment of life. A pilot study was done on 10% of the population. SPSS version 22 was used for the analysis and interpretation of data. Paired sample t-test was done to analyze the data.

RESULTS:

Table 1 shows pre and post-operative dental treatment with and without counselling; as there is an evident difference between the means of dental severity with counselling and only dental treatment pre and post-operative dental extraction. In Table 2, the pain inference was checked through rating their general activity, mood, walking ability, normal work, relations with other people, sleep and enjoyment of life. There was a significant improvement in the group having dental treatment with counselling as compared to other group having only dental treatment. In Table 3, dental anxieties in post-operative dental extraction in both

groups were reduced but in group of dental treatment with counselling it was more evident.

Table 1: Pre and Post-Operative Dental Pain Severity Between the Two Groups

	Pre-Pain Severity		Post-Pain Severity		N	t (df)	95% Confidence Interval		P-value
	Mean	SD	Mean	SD			Lower	Upper	
*DTC	4.91	2.24	3.79	2.01	200	7.5(199)	.83	1.41	<0.001
**DT	5.12	2.29	4.71	2.28					

*Dental Treatment with Counselling ** Dental Treatment without Counselling

Table 2: Pain Interference of the Patients in Pre and Post-Operative Dental Pain

	Pre-Pain Interference		Post-Pain Interference		N	t (df)	95% Confidence Interval		P-value
	Mean	SD	Mean	SD			Lower	Upper	
*DTC	5.03	2.50	3.60	2.00	200	7.3(199)	1.04	1.80	<0.001
**DT	5.23	2.49	4.07	2.48					

*Dental Treatment with Counselling ** Dental Treatment without Counselling

Table 3: Dental Anxiety of Patients Before and After the Dental Extraction

	Pre-Dental Anxiety		Post-Dental Anxiety		N	t (df)	95% Confidence Interval		P-value
	Mean	SD	Mean	SD			Lower	Upper	
*DTC	12.31	1.93	10.52	1.92	200	10.8(199)	1.46	2.12	<0.001
**DT	12.46	1.92	12.09	2.23					

*Dental Treatment with Counselling ** Dental Treatment without Counselling

DISCUSSION:

Dental anxiety and dental pain relationship must be well understood by the dentists, as this will have an impact on the quality of life of the patients after dental extractions. Most

of the studies were centred around either pre or post-operative pain after careful removal of impacted third molars, or on the adequacy of various pharmaceutical agents in fighting pre and post-operative sequelae¹⁶. Successful management of the

patient's pain and anxiety is central to the practice of dentistry. The range of pharmacological and non-pharmacological techniques at the disposal of the dental clinician, all of which rely to some extent on the behavior management skills of the dental team includes local anaesthesia, conscious sedation, general anaesthesia, acupuncture, TENS (Transcutaneous Electrical Nerve Stimulation)¹⁷. The National Institute for Health and Care Excellence (NICE) states that evidence-based psychological interventions such as Cognitive Behavioral Therapy can be effective treatments for anxiety related to dental pain and is recommended first-line treatments in preference to pharmacological treatment¹⁸. The intensity of dental anxiety towards dental pain is different among certain groups of population; several studies have shown that younger people, people with low income or socioeconomic status, and people with a low level of education tend to have more severe dental anxiety and pain than people who are elderly, more affluent or better educated¹⁹. Dental anxiety generally considered to have originated in childhood and develops further as a result of aversive conditioning and family influences²⁰. The anxiety provoked the pain mostly by auxiliary treatment procedure involving aesthetic injection, sharp dental instrument, unpleasant sounds and vibration of the drill's, experiences of the family members and friends, number of missing teeth may be an indicator of the number of traumatic experiences,

fear of suffocation, claustrophobia, a sense of helplessness, visiting for the first time and minor oral surgical procedure like tooth extraction²¹. Moderate dental anxiety can be reduced by a pleasant dental environment, a calm atmosphere and a patient's support attitude by medical staff, a trust relationship established through good communication between the patient and the doctor²². Certain information about the treatment procedure received from the practitioner would anticipate the sensation the patient might expect and see his preferences^{23, 24}. An optimal preoperative counselling plan for the surgical extraction of a patient may have the greatest impact on preparing patients for extraction and may decrease the severity of pain²⁵. Similar results were obtained in our study shown in Table 1. A study demonstrated that high pre-operative anxiety and stress levels could have an impact on post-operative recovery, resulting in increased post-operative pain²⁶. In Table 2, the group having dental treatment with counselling had minimized pain inference in post-operative dental extraction. A study in Korea found that patient selected music reduces the intraoperative anxiety during surgical extractions²⁷. Similarly, in our study Table 3 shows that patients' dental anxiety significantly reduces when dental treatment is provided along with counselling as compared to only dental treatment. Another study conducted in Saudi Arabia reported that showing a dental extraction video to patients under local anaesthesia

during the tooth extraction lowers the anxieties of the patients²⁸

CONCLUSION:

Physical pain and diseases are interconnected with psychological disturbances. Most of the dental patients have dental anxieties and phobias due to which they resist dental treatment, so it is important for dentists to provide them comfort through utilizing counselling skills.

LIMITATIONS:

It was not a randomized control trial; patients' characteristics and dental treatments were varied from patient to patient. Pharmacological treatment effects were not observed in this study.

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