A Cross Sectional Study on Analgesics Prescription Pattern Among Dentists in Various Departments at Azra Naheed Dental College, Lahore, Pakistan:

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Abstract

Dentists regularly prescribe analgesics to enhance clinical results since pain management is an integral element of dental treatment. In order to effectively treat and prevent pain associated with inflammation or surgery, dentists need to understand the pharmacological properties of the analgesics routinely used in dentistry. This study focused on daily practices of dentists of prescribing the analgesics, a questionnaire was provided to 44 participants who were willingly participating. 70% of them were Dentists and 11 of them were directly in periodontal department.Acetaminophen, ibuprofen, Panadol and naproxen appear to be the safest non-opioid medicines when considering the information addressing gastrointestinal and cardiovascular safety. Panadol was considered safest analgesic for pregnant women. Most focused side effect was gastric disturbance. Step-by-step instructions for managing the mild moderate and severe pain during dental treatment, and the potential benefits and hazards of the analgesics must be considered in dental practice are discussed.

Keywords: Analgesics, gastrointestinal, cardiovascular and dentists.

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INTRODUCTION

No one goes through life without experiencing pain(1), therefore it stands to reason that this is also one of the most popular explanations for why people go to the dentist(2, 3). For this reason, pain management is a major challenge that dentists must overcome to improve the standard of care they can offer their patients(3). To accomplish this, one must acquire both a deeper

understanding of the pain phenomenon and the pharmacological expertise to administer the most appropriate medicine based on the available data. When used correctly, opioid analgesics and antibiotics recommended by dentists as either an adjuvant to or as the sole treatment for common dental illnesses are a valuable and cost-effective approach (4). Opioids and nonsteroidal anti-inflammatory drugs (NSAIDs) are the two most frequently seen options(5).According to the available literature, dentists routinely prescribe pain relievers like paracetamol and diclofenac without providing enough knowledge about drugs to concern patient(6). This has been traced back to dentists' general lack of awareness of the dangers of medication interactions and how to avoid them. The literature calls for expanded training on how to spot and treat systemic problems. Some dentists have blamed a lack of experience or a prescription guideline for this information gap; consequently, it has been emphasized that ongoing training and international monitoring of prescription patterns are required to help develop a prescription guideline for the rational and appropriate use of analgesics(5). Antibiotic prescribing rates are known to decrease with practitioner expertise, but the same cannot be said for analgesic prescription rates(7).Despite the fact that they should be saved for very excruciating pain, opioids have become the medicine of choice around the world. It has been overprescribed, leading to an opioid crisis in the West (8).Nearly three-quarters (73%) of the medications prescribed by dentists were either antibiotics or pain relievers, according to research by Wall and colleagues (9). Approximately 10% of all antibiotics and opioid analgesics prescribed in the United States are written by dentists (10). These prescriptions may contribute to the opioid analgesic pandemic, including overdoses, that has swept the country (11).Due to the secondary effects of these drugs on population health, policymakers, physicians, and patient care advocates have continued to pay attention to dentists' prescribing patterns for opioid and analgesics. The overprescribing of opioid analgesics, which are the most often abused prescription drugs prescribed by dentists, is a major public health concern. Opioid analgesic usage frequently begins with either a legitimate opioid analgesic prescription or by obtaining leftover medication from a friend or family member (4).Significant research has been conducted on analgesics from a worldwide viewpoint, shedding light on a previously unknown knowledge gap and results as careful consideration of the patient's history, tolerance for the medicine in question, and personal preferences should go into selecting the appropriate analgesic. The analgesic efficacy of NSAIDs varies from patient to patient (12). This study focused on types of analgesics prescribed by dentists in healthcare setup.

METHODOLOGY

Study type and sampling

It was Google survey questionnaire based cross-sectional study in which convenient sampling was used and total 44 Dentists were participated. It was conducted at AzraNaheed Dentalcollege Lahore Pakistan. Total 26 questions with 4 to 5 choices of answers were enlisted. First question was consent of participant, other included Age, gender, clinical work experience, education (Highest), current working department, analgesics choice for mild moderate and severe pain,

frequency of prescribing, dose, treatment duration, drug adverse effect if any, analgesics for pregnant women, for heart patients, patient awareness and feedback in the last.

Statistics

The demographic, analgesic prescribing trend were all determined with the help of frequency analysis. In order to determine whether or not there is a correlation between demographics and prescribing pattern.

RESULTS

All 44 (100%) participants read and gave consent to give accurate information. Out of 44 participants 16 (36.4%) were female and 28 (63.6%) were male in which maximum 21 (47.7%) participants were having age between 26-35 years, 4 (9.1%) were between 20-25 years, 9 (20.5%) were between 30-35 and 10 (23.7%) were having more than 36 years of age.Clinical working Experience divided into four categories with number of participants fall in that category shown in figure 1.

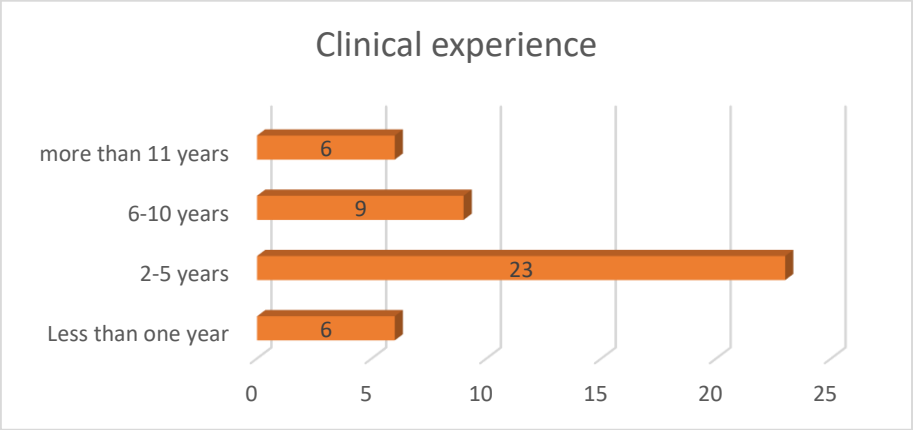


Figure 1 Clinical Experience in years

Qualification status of all participant with basic degree Bachelor of Dental Sciences were 32 (72.7%) and remaining 12 (27.3%) with other Bachelor of Sciences. Specialization degrees were Master of Philosophy 10 (22.7%), FCPS were 4 (9.1%) and MDs were 3 (6.8%) other specializations were Masters in Medical Education, Masters in Public health, CHPE, M Orth RCS Ed (UK), CHPE, Msc, DDCS and MFDSone each.All these participants were working in different department as shown in Figure 2.

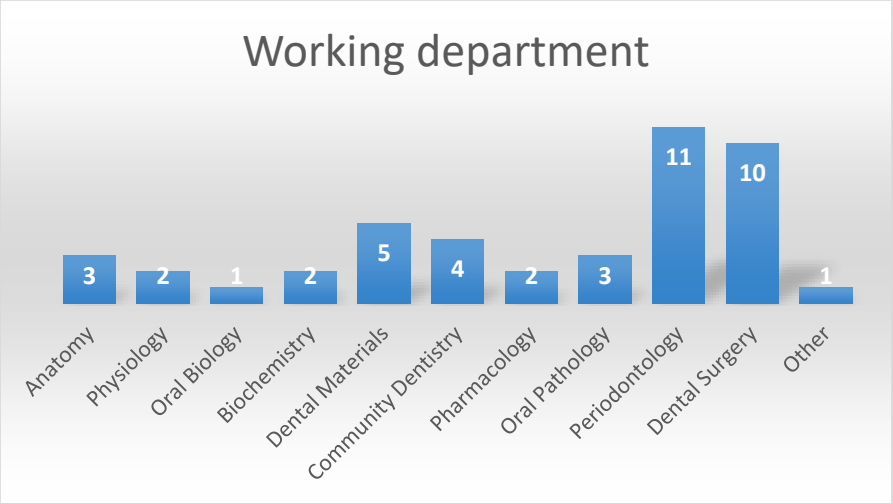


Figure 2 Frequency of participants relevant to their departments

Highest number 11 were working in Periodontology department were 11 (25.1%) and second most were in Surgery department 10 (22.8%) one participant did not specify department.Analgesics prescription for Mild pain Panadol by 3 (6.8%), 4 (9.1%) were preferringIbrufin and three (6.8%) were preferring paracetamol. And frequency to prescribing number of patients per day was maximum 5, and this practice was frequent for 6 (13.6%) participants, highest number of participants 17 (38.6%) were prescribing at least 4 patients, to three patients at least were prescribed by 14 (31.8%), for 2 patients score was 4 (9.1%) and to one only was having score 3 (6.8%).Moderate pain 11 (25%) participants preferred the Ibrufin, Different NSAIDS was preferred by 8 (18.2%)Figure 3 showed how frequently these analgesics were prescribed by participants on daily basis

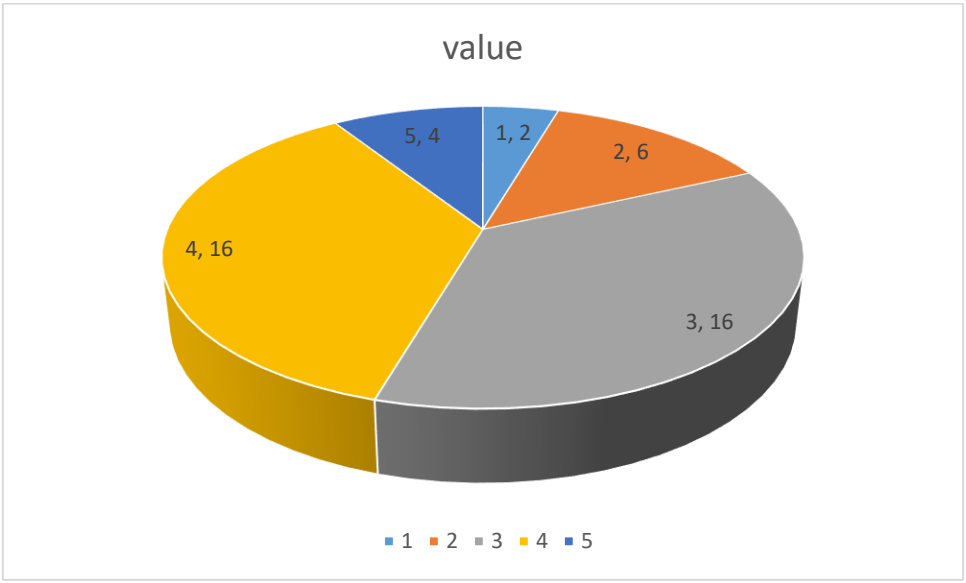


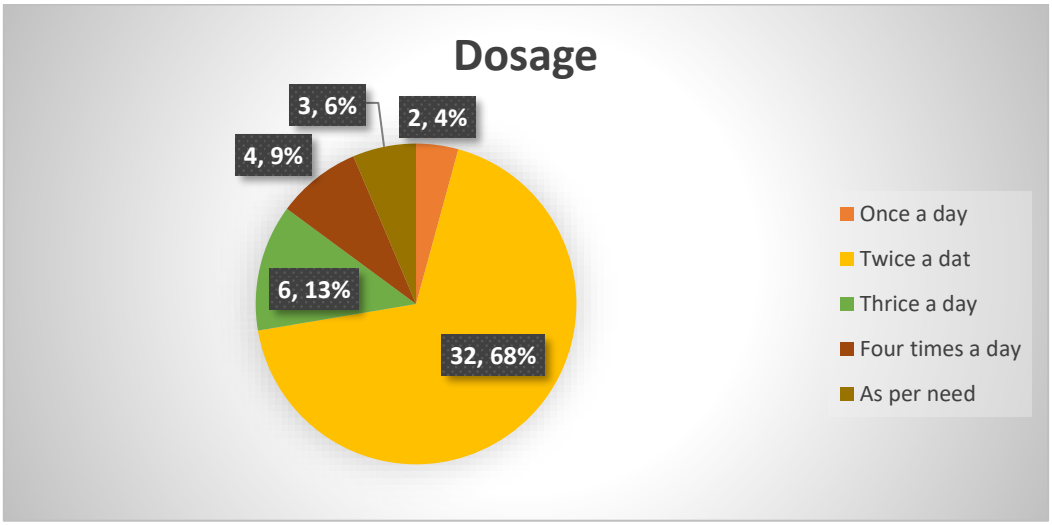
Figure 3 Number of participants prescribing analgesic/day for moderate pain

Analgesics prescribed for sever pain at least once a day by 5 (11.5%) participants, minimum two times a day by 9 (20.5%) participants, 3 times by 11 (25%) participants, 4 times by 11 (25%) participants and 5 times by 8 (18.2%) participants. Type of analgesics is described in table 1 which showed maximum number of participants preferred Synflex, and some participants preferred combination of more than one pain killer for severe pain management. Types of analgesics and frequency of participant's prescription is shown in table 1.

Table 1 Type of analgesics preferred in sever dental pain management

Type of Analgesics	Preferred by number of participant
Synflex	5
Naproxen Sodium	4
Tonoflex	2
Toradol	1
Brufen	1
Flexin	1
Nelbin IV	2
Brexin	1
Tramadol	3
codeine + acetaminophen	1
Nims	1
Diclofenac	1
Panadol+brufen	3
Piroxicam	1
Neubrol forte	1

All pain killer prescribed by participants of this study in all three types of pain mild, moderate and severe was prescribed as per daily dose shown in figure 4



Maximum participants 32 (68%) were preferred of prescribing pain killer twice a day and 3 participants advised their patients to take pain killer as per need. Duration of taking pain killer was as maximum 3 days advised by 27 (61.4%) of participants and for maximum 5 days was advised by 8 (18.2) participants. 8 (18.2%) participants preferred to advised for only one or till the pain got relieve. 33 (75%) participants were fully aware about the contradiction of analgesics they were prescribing and remaining 11 (25%) were not aware. The participants who were aware described contradiction as side effects most common Gastro problems secondly the renal problems.For pregnant patients the preferred choice of analgesics is described. Maximum number of participants 29 (67.4%) preferred Panadol over all other analgesics, second most was paracetamol 9 (20.9%) and 2 (4.6%) the acetaminophen and only 1 (2.3%) to Synflex.
Heath patients were prescribed following analgesics table 2

Table 2 Analgesics type prescribed to heart patients

Type of analgesics	Number of participants prescribing to Heart patients
Panadol	4
Paracetamol	3
Aspirin	1
Actecoaminophin	2
Nims	1
Caflam	1
NSAIDs	1
Lornoxicam	1
acetaminophen	1
Tylenol	1
Cox 1 and 2 inhibitors	1
Piroxicam	1
Aspirin	1
Diclofenac potassium	2
Brufen	1
Naproxen	1

Total 36 participants also suggest precautions for their patients while using analgesics maximum of them advised not to take over dose, a few of them advised, don't take empty stomach.

DISCUSSION

This study recruited 44 participants who prescribed medications to patients and they were directly interacting with patients and they all have given consent for providing correct information. Response rate of this study was more than 70% which can be considered ok as per previously published study in Spain (13) Turkey (14) and China (5, 15). In this study maximum participants 72% were having dental Sciences education and a highest number 11 of them were

working periodontal management department.According to a previously published research in India by Nagarajan*et al* aceclofenac + paracetamol + serratiopeptidase and diclofenac sodium + serratiopeptidase combinations are the most often prescribed analgesics for periodontal patients (16). While this study showed most of the participants 27 (61.3%) preferred choice was NSAIDs (ibuprofen, naproxen, diclofenac).Pain during root canal could be severe, for that in this study most of the participants preferred choice was Synflex 5, Neproxen 4 and Panadol 3. While in a recently published study tramadol and dexamethasone were the choice of analgesics (17). In another study, paracetamol and diclofenac were the choice of drugs for the same condition (18). Which showed, it is not surprising that NSAIDSs were frequently used for pain relief.Another study published in America showed the use of acetaminophen and opioid for the severe pain (15). A study published in 2020 categorized the analgesics for mild moderate and severe pain as ibuprofen 200-400mg/6 hours for mild pain, naproxen 500mg after 12 hours for moderate pain and ibuprofen 400-600mg + acetaminophen 500mg after every 6 hours for severe pain (19). While this study showed ibuprofen 3 time a day for mild pain, ibuprofen with high dose three time a day for moderate pain and NSAIDs in combination 4 times a day for severe pain. Maximum dose number was three time a day prescribed in this study by participants while another study published showed number of dose were 4 time a day (19).Ibuprofen has a minimal probability for causing adverse gastrointestinal, hepatic, or cardiovascular effects within this dose range compared to other tNSAIDs. A higher dose of 400–600 milligrams (mg) may be used if the initial dose does not produce adequate analgesia; however, this comes with its own set of hazards for the digestive system and the heart (3). Same concerns have been shown in this study, most of the participants suggests analgesics misuse can lead to gastric disturbance. Acetaminophenwas the most percribed analgesics to pregnant women in a study published in 2016 (20) while in another study published 2010 where the drug of choice for pain relief was acetaminophen (21) while in our study 29 (67%) participants preferred Panadol over other analgesics for pregnant women. Panadol and paracetamol was also drug of choice for Heart patients in this study, but in another study Aspirin was the choice of drug for heart patients(22).Dentists should take into account the patient's pain level, the medicine's pharmacological qualities, the patient's systemic disease history, and any potential drug interactions when prescribing analgesics in dental clinics. The overall risk of non-opioid analgesics as they are used in dentistry is low, and they have been found to have a safe profile when used for acute dental pain. Acetaminophen, ibuprofen, Panadol and naproxen appear to be the safest non-opioid medicines when considering the information addressing gastrointestinal and cardiovascular safety.

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Adeel Tuasene et al.
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