

Understanding Of, Attitude Towards Dental Undergraduate And Postgraduate Students Regarding Drug Prescription Given After Dental Surgery Procedure

Nikhileswari M¹, Dr. Prakash Pugazhendhi², Dr. Rajeswary K³, Dr. Kalaivani S⁴,
Dr. Ravisankar B⁵, Dr. Kiruthiga D⁶.

¹*Undergraduate Student, Prosthodontics Crown And Bridge, Adhiparasakthi Dental College And Hospital, Melmaruvathur, Tamilnadu 603319.*

²*Assistant Professor, Prosthodontics Crown And Bridge, Adhiparasakthi Dental College And Hospital, Melmaruvathur, Tamil Nadu 603319.*

³*Reader, Public Health Dentistry, Adhiparasakthi Dental College, And Hospital, Melmaruvathur, Tamil Nadu 603319.*

⁴*Reader, Public Health Dentistry, Adhiparasakthi Dental College, And Hospital, Melmaruvathur, Tamil Nadu 603319.*

⁵*Senior Lecturer, Public Health Dentistry, Adhiparasakthi Dental College And Hospital, Melmaruvathur, Tamil Nadu 603319.*

⁶*Assistant Professor, Prosthodontics Crown And Bridge Adhiparasakthi Dental College And Hospital, Melmaruvathur, Tamil Nadu 603319.*

Abstract:

Background:

It is essential that dental students understand proper prescription because they will be the future professionals who treat patients independently when they graduate. The purpose of the current study was to evaluate dental trainees' understanding of prescription medication.

Objective:

The aim of the study was to evaluate the knowledge, attitude, preference, and common errors regarding drug prescriptions after dental surgery procedures by dental undergraduate and postgraduate students in Tamil Nadu.

Methods:

Both dental undergraduate and postgraduate students (n=252) were given a standardized, self-administered questionnaire created especially for them. A survey was conducted using a previously authentic questionnaire with 15 closed-ended questions. The data were collected and analyzed.

Result:

Each question's most common answer was deemed the most important. Amoxicillin was the most often prescribed antibiotic for severe infections (75%). Typical dental conditions that need prescription medication show 55.6% in both 1 and 3 (infection and traumatic injury). Often, prescriptions show 48.0% for paracetamol. The WHO Guide to Good Prescribing was known to roughly 61.1% of dentists. A statistically substantial portion of postgraduate dental students knew that medications were prescribed for dental patients.

Conclusion:

The findings of this study suggest that there is a need to enhance the understanding, attitudes, and behavior of dental undergraduate and graduate students about medication prescriptions. All dental students must, however, be well-versed in the pharmacodynamics, dose, and prescription of medications for treating oral infections in both healthy and systemically compromised patients.

Keywords: *Dental students, prescription, analgesics, antibiotics*

I. Introduction

Drug therapy is the primary tool doctors use to influence the health of their patients [1]. Dental drugs may manage pain, prevent disease, or fight infection, among other things, and are used before and after dental procedures (or oral surgery). Common medication can reduce your pain or discomfort and help prevent complications. Since these introductions, antibiotics have been used extensively in dentistry for treatment as well as prevention of infection [2]. This medication can be very beneficial to patients, but it can also be very harmful. Writing a prescription is a difficult and complicated process that calls for diagnostic reasoning and critical thinking [3]. However, the literature shows that dentists' prescribing practices are lacking for a few reasons, from social circumstances to a lack of understanding. In many instances, antibiotics are prescribed for an excessively long time and with irregular frequency and duration. [4]. We observed that there is variation among practitioners on the proper necessity, time, and type of medication. Based on our experience as well as recent literature search results [5]. It has been confirmed that dental professionals in Mexico and other countries typically lack the finest pharmacological education available, which leads to prescription errors [6]. Therefore, it is critical to assess the dentistry students' medical expertise.

Since there is strong evidence that recent graduates lack of fundamental understanding of pharmacology and pharmacotherapy is a major contributing factor to prescribing errors, there is a growing need to assess undergraduate prescribing education to determine whether it is meeting the national goal of producing safe and knowledgeable prescribers. Furthermore, instruction in clinical disciplines rarely addresses the fundamentals of drug treatment or pharmacology, instead concentrating on symptoms and making an accurate diagnosis [3]. The aim of the present study was to assess the prescription knowledge, attitude, preference, and common errors made

by dental undergraduate and postgraduate students of Indian dental students.

II. Methodology

An anonymous self-administered questionnaire was distributed to a convenience sample of dental professionals in December 2024 as part of a descriptive study. The questionnaire was created by optimizing it from a previously published study to fit this topic [7]. Undergraduate students in their third and fourth years, as well as interns and dental residents, represent the study population; first- and second-year dental students were not included because they do not provide treatment for patients in the clinic. The students were given a questionnaire with fifteen questions on it. A convenience sample of five undergraduate and five graduate students completed the questionnaire, which included closed-ended questions. Their responses indicated that there was nothing wrong with the questionnaire. Questions were regarding those conditions they frequently prescribe antibiotics for, the forms and dosage modifications, the length of time they are administered, etc. The degree of understanding regarding the pharmacokinetics, dynamics, indications, and contraindications of the recommended antibiotics was questioned [8]. There is strong evidence that young hospital physicians are more prone than consultants to commit prescribing errors during their first two years of practice following graduation, accounting for 8-10% of prescriptions [9] [10]. This is especially concerning because a significant percentage of hospital prescriptions (68%) are written by junior physicians. As a result, the study's focus was on dental undergraduate students and dental residents' prescription knowledge, attitudes, preferences, and typical mistakes.

III. Result

Out of the 252 individuals involved in the research, which included 126 dental undergraduates and 126 postgraduate students who were surveyed, 149 were women (59.1%) and 103 were men (40.9%). Table I represents the descriptive statistics based on the demographic data statistics, in which clinical experience shows 44% in 2 years, 25.8% with no clinical experience, 25% with 4-5 years, and 5.2% in more than 10 years, in which typical dental conditions that need prescription medication show 55.6% in both 1 and 3 (infection and traumatic injury), 21.4% in all of the above, 15.1% in 1, 2, 3 & 4 (infection, pain, traumatic injury, hypersensitivity of teeth, soft and hard tissue procedure), and 7.5% only 1 (infection). Often take prescription shows 48.0% for paracetamol, 33.7% in aceclofenac + paracetamol, 8.7% diclofenac, 7.5% in ibuprofen, and 2% in metroplex. Frequently made mistakes show 63.1% in overprescribing or polypharmacy, 15.9% not aware

of what to prescribe, 10.7% wrong filled prescriptions, and 9.9% treatment duration is incorrect. Table 2 represents the responses based on knowledge and attitude data statistics, showing that 76.2% are aware of antibiotics prescription protocol, and the most common follow-up antibiotics protocol is 61.1% WHO protocol; 42.1% do not refer to the patient by name and adequately explain the diagnosis and medication. Most common antibiotics prescribed when severe the infection is 75% amoxicillin, In which course of action for treating an oral infection shows 53.6% antibiotics only, and 69.4% prescribe preoperative antibiotics before dental surgery procedures, in which circumstances prescribing preoperative antibiotics shows 63.1% infection. Graph I Distribution of study population based on knowledge and awareness among the study population statistically substantial portion of postgraduate dental students knew that medications were prescribed for dental patients

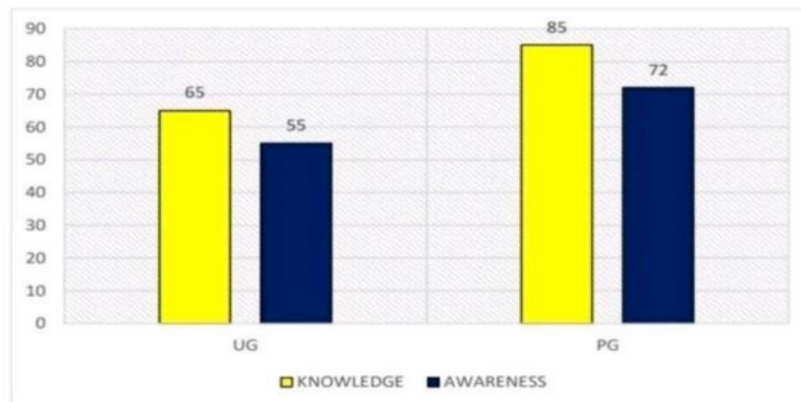
Table 1 Represents The Descriptive Statistics Based On The Demographic Details Of The Study Population

PARAMETER	OPTIONS	FREQUENCY	PERCENTAGE
CLINICAL EXPERIENCE	2 years	111	44.0
	4-5 Years	63	25.0
	More than 10 years	13	5.2
	No	65	25.8
TYPICAL	1,2and4	38	15.1
	All of the above	54	21.4
	Both 1 and 3	140	55.6
	Only 1	19	7.5
OFTEN TAKEN MEDICATIONS	Aceclofenac + paracetamol	85	33.7
	Diclofenac	22	8.7
	Ibuprofen	19	7.5
	Metroplex	5	2.0
	Paracetamol	121	48.0
FREQUENTLY MADE MISTAKES	Not aware what to prescribed	40	15.9
	Over prescribing or pharmacology	159	63.1
	Treatment duration is incorrect	25	9.9
	Wrong filled prescription	27	10.7

Table 2 Represents The Responses Given By The Study Population Based On Knowledge And Attitude

QUESTIONS	OPTIONS	FREQUENCY	PERCENTAGE	SIG
Do you follow the antibiotics prescription protocol? Are you aware of it?	No	15	6.0	0.00
	Not aware of it	45	17.9	
	yes	192	76.2	
Which antibiotic protocol do you follow?	AHA	34	13.5	0.00
	MISH	27	10.7	
	Others	7	2.8	
	WHO	154	61.1	
When prescribing medication, do you refer to the patient by name and adequately explain the diagnosis and medication?	Most of time	53	21.0	0.00
	No	106	42.1	
	Sometimes	93	36.9	
Depending on how severe the infection which antibiotic is	Amoxicillin	189	75.0	0.00

your first choice	Augmentin	24	9.5	
	Metronidazole	31	12.3	
	Others	4	1.6	
Which of the following best describes your course of action for treating an oral infection that cause diffuse facial swelling?	Antibiotics and Analgesic	78	31.0	0.00
	Antibiotics only	135	53.6	
	I don't know	30	11.9	
	Others	3	1.2	
Do you prescribe Preoperative antibiotics before the dental surgery procedure?	No	28	11.1	0.00
	Not aware of it	35	13.9	
	yes	175	69.4	
In which circumstances do you prescribe preoperative antibiotics	Impaction	38	15.1	0.00
	Implant	28	11.1	
	Infection	159	63.1	
	Others	21	8.3	



Graph 1: OVERALL SCORE AMONG STUDY POPULATION

IV. Discussion

Prescription writing is a challenging procedure that requires an ensemble of practical skills, clinical knowledge, and theoretical understanding. [11]. The questionnaire was given to undergraduate and graduate dentistry students at Tamil Nadu Dental College and Hospital. As part of their practical instruction in pharmacology, second-year Bachelor of Dental Surgery students learn about prescription. Therefore, the training faculty's primary duty is to enhance the understanding of our future prescribers [12]. This will result in highly trained doctors who are confident enough to prescribe drugs and have adequate drug knowledge [13].

Infection was the most common reason for a dental prescription, even though patients actually go to the dentist because they are in pain. Infections usually cause pain; thus, they should always be addressed (table 1). According to 55.6% of students in this study, infection and traumatic injury are common dental diseases that require prescription medicine; this is proved when compared to the study conducted in Guzman Alvarez et al. [14] and Anuj Chhabra study [3]. The majority of dentistry students (48%) prescribe paracetamol as an analgesic; Ankita Jain and Guzman Alvarez's study revealed a similar result [1][14]. Approximately 82.9% of students agreed that antibiotics are an effective way to treat bacterial infections. The greatest number of dental students recommended this, as evidenced by numerous articles Krithika P.S. Gayathri [15]. Amoxicillin is the drug of choice for 75% of participants when it comes to prescription antibiotics. This is comparable to Cherry WR's study [16] [17], which demonstrated that amoxicillin was an effective agent and a well-tolerated medication of choice with a safety profile that was in line with its known pharmacologic effects. Only 30% of

dental students followed the WHO's prescribing standards, according to the Guzman-Alvarez et al. study [14]. The remaining students did not follow the criteria since most of them were not aware of them.

This is in contrast to the current study, where 61.1% of study participants were aware of WHO guidelines, and other similar articles say dental students are aware of antibiotics protocol in Astha Doshi [6]. Overall score among study population shows Based on the sum of all the positive answers, dental students' overall knowledge and attitude regarding the prescription of antibiotics was higher for postgraduates than for undergraduates. The findings of our investigation were comparable to those of the Doshi et al. study in the same [6]. The study contrasted with other research that demonstrates overuse of antibiotics, particularly among senior doctors in training, indicating a lack of curriculum-based training on antibiotic usage.

V. Limitation

Limitation of this present study area not included more protocol, not included localized antibiotic therapy knowledge, intervention is not included, not explained about other antibiotics, and not included case based questionnaire in the questionnaire.

VI. Conclusion

The present study found that, in comparison to postgraduate students, undergraduate dentistry students had a moderate understanding of and misconceptions regarding medications. Although they were not adhering to the precise criteria and standardized procedures, the practice of prescribing medications proved satisfactory.

Financial Support And Sponsorship

NIL

Conflicts Of Interest

There are no conflicts of interest

Reference:

- [1] Jain A, Gupta D, Singh D, Garg Y, Saxena A, Chaudhary H, Et Al. Knowledge Regarding Prescription Of Drugs Among Dental Students: A Descriptive Study. *J Basic Clin Pharma* 2016;7:12-6.
- [2] Safoura Sheikh Rezaei , Brigitte Litschauer , Karolina Anderle , Stephanie Maurer , Patrick Jan Beyers , Berthold Reichardt , Michael Wolzt - Antibiotics Prescription Tooth Extraction In Adults: A Retrospective Cohort Study In Australia 2022 Nov 20;22:519
- [3] Anuj Chhabra, C Nidhi, Anurag Jain. Knowledge, Attitude & Practice Preference Regarding Drug Prescription Of Resident Dental Doctors: A Quantitative Study 2019;30(2):91-100.
- [4] Najla Saeed Dar-Odeh , Osama Abdalla Abu-Hammad, Mahmoud Khaled Al-Omiri, Ameen Sameh Khraisat, Asem Ata Shehabi Antibiotic Prescribing Practices By Dentists: A Review 2010 Jul 21:6:301-6
- [5] Al-Maslamani, Manal J.; Sedeqi Faraj A.; Moule, Alex J. Prescription Pattern Of Antibiotics And Analgesics In Endodontic Treatment In The Kuwaiti Population - A Self-Administered Survey P 128-134, Sep-Dec 2014.
- [6] Astha Doshi , Kailash Asawa , Nagesh Bhat , Mridula Tak Priyanjali Dutta , Tajinder Kumar Bansal , Ruchika Gupta Knowledge And Practices Of Indian Dental Students Regarding The Prescription Of Antibiotics And Analgesics 2017;90(4):431-437.
- [7] Arm Ramadan. Knowledge & Attitude Towards Antibiotics Prescribing Among Dentists In Sudan 19 Jan 2019
- [8] Sosa George ,Dhanraj Ganapathy, Shruti Pillai .Knowledge, Attitude, And Practice On Antibiotic Therapy For Pediatric Patients Among Undergraduate Dental Students: A Questionnaire Study 26 July 2016
- [9] Dornan T, Ashcroft D, Heathfield H, Et Al. London: General Medical Council; 2009. An In-Depth Investigation Into Causes Of Prescribing Errors By Foundation Trainees In Relation To Their Medical Education Equip Study. May 24, 2015
- [10] Darren M Ashcroft , Penny J Lewis , Mary P Tully , Tracey M Farragher , David Taylor , Valerie Wass , Steven D Williams , Tim Dornan .Prevalence, Nature, Severity, And Risk Factors For Prescribing Errors In Hospital Inpatients: Prospective Study In 20 Uk Hospitals. 2015 Jun 27;38(9):833-843
- [11] Baldwin Mj ,Abouyannir M ,Butt Tf. Essential Therapeutics Skills Required Of Junior Doctor Perpect Med Educ.2012;1:225-36
- [12] World Health Organization. Who Model List Of Essential Medicines 2011 Available From <http://www.whqlibdoc.who.int/Hq/2011/A95053-Eng.Pdf>
- [13] Mendonca Jm, Lyra Dp Jr, Rabelo Js, Siqueira Js, Balisa—Rocha Bj, Gimenes Fr, Bonjardim Lr. Analysis And Detection Of Dental Prescribing Errors At Primary Health Care Units In Brazil. *Pharm World Sci.* 2010 Feb;32(1):30-5
- [14] Guzmán-Aivarez R, M Medeiros, Li Reyes Lagunes, Ae Campos-Sepúlveda Medeiros M. Knowledge Of Drug Prescription In Dentistry Students. *Drug, Healthcare, And Patient Safety.* 2012;4:55-9
- [15] P.S. Gayathril, Krithika C. Knowledge And Attitude Towards Antibiotic Prescription Among Dental Students 24-3-2021 462-465.
- [16] Cherry Wr, Lee Jy, Shugars Da. Antibiotic Use For Treating Dental Infections In Children: A Survey Of Dentists' Prescribing Practices. *J Am Dent Assoc.* 2012 Jan;143(1):31-8
- [17] Kia Sj, Behraves M, Sigaroudi Ak. Evaluation Of Drug Prescription Pattern Among General Dental Practitioners In Rasht, Iran. *J Dentomaxillofac Radiol Pathol Surg.* Feb 201318-23

