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Research Article

**KNOWLEDGE AND PRACTICES OF PATIENTS  
REGARDING ANTIBIOTICS USED FOR DENTAL  
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**Abstract:**

**Introduction:** Antibiotics are commonly used as well as misused drugs in the world, particularly in developing countries. **Objectives:** The main objective of the study is to analyse the knowledge and practices of patients regarding antibiotics used for dental problems. **Material and methods:** This cross-sectional study was conducted in Bhitai Dental & Medical College, Mirpur Khas during January 2019 to August 2019. The data was collected through a questionnaire. The questionnaire used aided in collecting the following information from study participants: Demographic characteristics, knowledge about antibiotic prophylaxis, knowledge about antibiotic resistance, knowledge of antibiotic prescription guidelines, clinical conditions for which antibiotics are indicated, most commonly prescribed antibiotics, antibiotic regimen durations. **Results:** A total of 312 dental patients responded to this survey, 138 of whom were high income (44.2%), and 174 of whom were low income (55.7%). The responses given by the participants regarding antibiotic prescriptions for commonly encountered oral and systemic conditions are presented. When comparing low income and high-income dental patients, it was found that there was no significant difference in antibiotic prescription frequency between the two groups. **Conclusion:** It is concluded that high self-medication rates were reported in the sample despite reasonable knowledge about antibiotic resistance and its side effects

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**INTRODUCTION:**

Antibiotics are commonly used as well as misused drugs in the world, particularly in developing countries. In dentistry, there is evidence to suggest over-prescription of antibiotics by dental practitioners in the management of acute dental conditions, despite contrary clinical guidelines. This might be due to uncertainty about diagnosis, demand and expectations of patients, and because of the pressure of time on the clinician [1].

Patient expectations increase the possibility of receiving a particular prescription by three times. Inappropriate antibiotic prescribing habits lead to the development of resistant bacterial strains [2]. Centers for Disease Control US (CDC) estimates that at least 30% of oral antibiotic courses prescribed in the outpatient setting during 2010-11 were unnecessary. In an English study, general dental practitioners (GDPs) reported that their decisions in antibiotic prescribing were compelled by both clinical related pressures and wider responsibilities towards public health [3].

In dentistry, the use of antibiotics prophylactically and therapeutically has become common practice. Early reports stated that penicillin showed effectiveness in treating cellulitis and angular cheilitis. The most common infections treated with antibiotics in the field of dentistry are infections related to the root canal (endodontic infections). However, the use of antibiotics in such situations is not always warranted. Recent research shows that most endodontic infections could be managed with only local interventions to eliminate or relieve the source of infection, such as incision and drainage, root canal treatment, and tooth extractions, without the need for antibiotic therapy [4].

The World Health Organization's (WHO) Guide to Good Prescribing has recently focused on educating healthcare providers about reasonable prescribing with real-life examples and a step by step guideline. The Faculty of General Dental Practice in the United Kingdom (FGDP UK) and the Scottish Dental Clinical Effectiveness Programme (SDCEP) clinical guidelines have also stated that antibiotics are not recommended in dealing with non-spreading infections of teeth and alveolar bone (dentoalveolar infections) in healthy individuals [5]. Many studies have been conducted in the UK, India, and Iran assessing the knowledge of dentists and dental students regarding the prescription and indications

of antibiotics, and although the amount of evidence of mounting antimicrobial resistance in medical literature is increasing, studies show that the dental community lacks adequate knowledge in this area [6].

**Objectives**

The main objective of the study is to analyse the knowledge and practices of patients regarding antibiotics used for dental problems.

**MATERIAL AND METHODS:**

This cross-sectional study was conducted in Bhitai Dental & Medical College, Mirpur Khas during January 2019 to August 2019. The data was collected through a questionnaire. The questionnaire used aided in collecting the following information from study participants: Demographic characteristics, knowledge about antibiotic prophylaxis, knowledge about antibiotic resistance, knowledge of antibiotic prescription guidelines, clinical conditions for which antibiotics are indicated, most commonly prescribed antibiotics, antibiotic regimen durations. The participants were divided into various groups such as; Less educated (up to matriculation level, 36.8%), More educated (above matriculation level, 63.2%), Low-income and High income (25000 PKR and above monthly, 59.5%) groups.

The data was collected and analysed using SPSS version 19. All the values were expressed in mean and standard deviation.

**RESULTS:**

A total of 312 dental patients responded to this survey, 138 of whom were high income (44.2%), and 174 of whom were low income (55.7%). The responses given by the participants regarding antibiotic prescriptions for commonly encountered oral and systemic conditions are presented. When comparing low income and high income dental patients, it was found that there was no significant difference in antibiotic prescription frequency between the two groups. However, when questioned with regards to specific conditions, such as localized intraoral swelling, juvenile diabetes, and congenital cardiac abnormalities, there were significant difference between the prescription tendencies of low income and high income ( $p = 0.002$ ,  $p = 0.007$ , and  $p = 0.045$ , respectively).

**Table 01:** Comparison of the number of affirmative responses that the two groups

Conditions	Low income <i>n</i> (%)	High income <i>n</i> (%)	<i>p</i> -Value
Reversible pulpitis	26 (18.84)	46 (26.44)	0.113
Irreversible pulpitis	32 (23.19)	56 (32.18)	0.079
Intraoral draining sinus tract	78 (56.52)	110 (63.22)	0.229
Extraoral draining sinus tract	91 (65.94)	112 (64.37)	0.772
Localized intraoral swelling	59 (42.75)	105 (60.34)	0.002 *
Acute facial swelling	124 (89.86)	145 (83.33)	0.097
Dental trauma	36 (26.09)	62 (35.63)	0.071
Periodontal diseases	50 (36.23)	77 (44.25)	0.152
Pericoronitis	72 (52.17)	83 (48.26)	0.492
Simple extraction	11 (7.97)	26 (14.94)	0.058
Extraction by open method	88 (63.77)	103 (59.20)	0.410
Periapical abscess	86 (62.32)	119 (68.39)	0.261
Apical periodontitis	49 (35.51)	60 (34.48)	0.850
Dry socket	53 (38.41)	63 (36.21)	0.689
Viral infections	44 (31.88)	60 (34.48)	0.628
Juvenile diabetes	45 (32.61)	83 (47.70)	0.007 *
Blood dyscrasias	52 (37.68)	77 (44.25)	0.241

**Table 02:** Knowledge of antibiotic resistance and prescription guidelines.

Questions	Group 1 <i>n</i> (%)	Group 2 <i>n</i> (%)	<i>p</i> -Value
Knowledge of antibiotic resistance	98 (71.01)	126 (72.41)	0.785
Knowledge of antibiotic prophylaxis	110 (79.71)	149 (85.63)	0.166
Knowledge of the guidelines for antibiotic prescription	92 (66.67)	138 (79.31)	0.011 *

\* Statistical significant difference between the groups;  $p \leq 0.05$ .

### DISCUSSION:

Oral conditions that present to dental clinics are mostly inflammatory conditions which necessitate operative interventions, rather than infectious processes that would benefit from antibiotics. In dentistry, situations that require antibiotic therapy are limited to oral infections accompanied by fever, lymphadenopathy, and trismus [7]. Our study found that dental students in our sample would routinely prescribe antibiotics for conditions that, according to guidelines, do not require them, and which could be managed with operative measures alone. For example, antibiotics were deemed necessary by students for periapical abscess (65.7%), dry socket (37.1%), and pulpitis (25.6%), all of which are conditions which are routinely treated without them [8].

Examples of conditions which have been found to benefit from treatment plans rather than antibiotics include pulpitis and necrotic pulp, for which root canal therapy is considered the standard of care [9]. Antibiotics are frequently prescribed for such conditions although, according to guidelines, their benefit is unproven. A similar situation exists for the commonly encountered situation of dry sockets (alveolar osteitis), which is essentially not an infection and is thus not expected to improve with

antibiotics, yet they are frequently prescribed for it [10].

### CONCLUSION:

It is concluded that high self-medication rates were reported in the sample despite reasonable knowledge about antibiotic resistance and its side effects. Antibiotic misuse was widespread in the sample and may be linked to the misconception that antibiotics have an antiviral and analgesic effect.

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