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Research Article

**ANALYSIS OF KNOWLEDGE AND PRACTICES OF PATIENTS
REGARDING ANTIBIOTICS USED FOR DENTAL PROBLEMS**Dr Mariam Fatima Khokhar¹, Dr Sarang Sohoo²¹Jinnah postgraduate Medical Center Karachi³Bibi Aseefa Dental College Larkana**Article Received:** August 2020**Accepted:** September 2020**Published:** October 2020**Abstract:**

In dentistry, the use of antibiotics prophylactically and therapeutically has become common practice. The basic aim of the study is to analyze the knowledge and practices of patients regarding antibiotics used for dental problems. This cross sectional study was conducted in Jinnah postgraduate Medical Center Karachi during January 2020 to June 2020. A self-completed questionnaire containing both closed and open ended questions was developed. The questionnaire included (i): general information, (ii): perception and knowledge of antibiotic resistance, (iii): reported management of oral problems, (iv): perceptions about oral infections and (v): perceptions of how people perceive oral problems. Ninety-four (67.1%) of the respondents had attended a CPD course on antibiotic use in the last one year, 8.6% at least once in the last two years, and 7.1% in the last five years while 4.3% reported not having had any since commencement of dental practice. The most common source of the CPD was from drug sales representatives with 28.6%; self-directed learning with 25.7%; conferences with 14.3%; journal clubs with 5.7%; dental schools with 4.3%; hospitals/clinics with 1.4% and a combination of the above with 10.0%. It is concluded that dental students may prescribe antibiotics inappropriately to manage various oral and systemic conditions when they are not indicated.

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INTRODUCTION:

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)¹. 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 therapy². Research has often focused on patients' contribution to inappropriate use of medication while less attention has been paid to the role of professionals, especially dentists to this growing problem. Antibiotics and analgesics are the most commonly prescribed medicine by dental practitioners. As antibiotics do not cause a direct effect on host cells, they are often prescribed on a "just in case" basis. Dentist prescribe antibiotics for the treatment of acute infections, treatment of non-odontogenic infections, prophylaxis of local and systemic spread³. It is also seen that many dental patients 'expect' an antibiotic prescription, and therefore they may influence their prescription. Studies on the knowledge of antibiotics prescription reveal that factors other than sound knowledge may influence their prescription practice⁴. Due to lack of guidelines, differences in prescription practices have been common. Recent changes in antibiotics use for prophylaxis of IE has also resulted in differences in practice amongst dentist in different countries⁵.

Antibiotic resistance is a cause of major concern, as more and more resistant strains are being seen. This makes it difficult to eliminate infections. Many infections now contain bacteria that do not respond to conventional treatment and require more specific and potent antibiotics. The reason suggested for this is the overuse of antibiotics, in which case, certain strains of bacteria are able to survive due to mutational changes⁶.

The basic aim of the study is to analyze the knowledge and practices of patients regarding antibiotics used for dental problems.

MATERIAL AND METHODS:

This cross-sectional study was conducted in Jinnah postgraduate Medical Center Karachi during January 2020 to June 2020. A self-completed questionnaire containing both closed and open-ended questions was developed. The questionnaire included (i): general information, (ii): perception and knowledge of antibiotic resistance, (iii): reported management of oral problems, (iv): perceptions about oral infections and (v): perceptions of how people perceive oral problems. The socio-demographic characteristics of the dentists were summarized using frequencies and percentages; cross tabulations were used to compare the respondents' score about practice regarding oral diseases with practice types; logistic models were performed to study the association between respondents' characteristics and score on reported practice regarding oral diseases.

The data was collected and analyzed using SPSS version 19.

RESULTS:

Ninety-four (67.1%) of the respondents had attended a CPD course on antibiotic use in the last one year, 8.6% at least once in the last two years, and 7.1% in the last five years while 4.3% reported not having had any since commencement of dental practice. The most common source of the CPD was from drug sales representatives with 28.6%; self-directed learning with 25.7%; conferences with 14.3%; journal clubs with 5.7%; dental schools with 4.3%; hospitals/clinics with 1.4% and a combination of the above with 10.0%. The PHDOs and the female respondents were significantly more influenced by the patients into prescribing antibiotics than their respective counterparts ($P = 0.001$, Table 1).

Table 01: Analysis of questionnaire according to frequency distribution

Variable	Response	Category	Prevalence (%)	P
Knowledge on prophylactic use of antibiotics	Correct	Dentist	69.2	0.001
		PHDO	31.3	
		Public	33.3	0.005
		Private	57.1	
Patients' influence on antibiotic prescription	Strong to very strong	Male	27.6	0.001
		Female	66.7	
		Dentists	31.3	0.001
		PHDO	72.2	
Indications for culture and sensitivity	Correct	Public	44.4	0.02
		Private	69.2	
Use of systemic antibiotics in dry socket	Yes	≤2 years of last antibiotic course	66.0	0.01
		>2 years of last antibiotic course	50.0	
Antibiotic use in endodontic therapy	Always and frequently	≤5 years of graduation	49.0	0.001
		>5 years of graduation	33.3	

Table 02: Knowledge of antibiotic resistance and prescription guidelines.

Questions	Juniors n (%)	Seniors n (%)	p-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 *

DISCUSSION:

This study showed that two thirds of the respondents (61%) have sub-optimal knowledge when evaluated through written simulated case scenarios, in contrast to studies done on general dental practitioners in Australia and Fiji that showed an average to moderate level of correct knowledge among dentists regarding antibiotic use⁷. The reason for the sub-optimal knowledge in this study might be their lack of knowledge, treatment according to the patients' expectations, social background of the patients, workload or lack of practical knowledge and interpersonal skills on the part of these dentists⁸. These findings indicate the need to improve health education among dentists as a matter of priority. The same is emphasized in a study done on general dentists in England. Similar results were also shown in the study done on South Australian dentists⁹. Results from a survey done in Turkey also support the need for regular courses regarding implementation of antibiotic usage in dental practice. In Pakistan, there are no legal requirements to undertake any continuing professional development courses; therefore, these dentists may be following outdated guidelines¹⁰. A Belgian study on dentists showed that continuing education programs

were less satisfying for the participants. Therefore, selection of the most effective intervention should be condition and situation specific¹¹. This study shows that the dentists practicing only in the public or private sector hospitals are less likely to have optimal knowledge as compared to those practicing in multiple settings, probably because of the formal and informal education from colleagues and peers. In addition, these dentists treat more patients, while dentists practicing only in the clinic pay more attention to their patients' expectations by giving them more time, thus seeing fewer patients¹².

CONCLUSION:

It is concluded that dental students may prescribe antibiotics inappropriately to manage various oral and systemic conditions when they are not indicated. Furthermore, there is a clear defect in education and awareness of students with regards to antibiotic guidelines. Dental diseases are predominantly caused by local factors.

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