

## Self-prescribed antibiotics by Saudi patients as a routine self-management of dental problems

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**Abstract:** Introduction: Over the counter antibiotics have become a routine practice for self-management. No rules or regulations restrict or control the use of such antibiotics in Saudi Arabia. Most antibiotics are available in private pharmacies without prescription. Materials & methods: A single page survey was conducted for Saudi patients attending the oral and maxillofacial surgery clinics, College of Dentistry, King Saud University, Saudi Arabia and the dental clinics at College of Dentistry, Salman Bin Abdulaziz University, AlKharj, Saudi Arabia. The questionnaire was filled by interviewing patients by the consultant or senior registrars. The questionnaire was validated by pretesting it on a small group of 32 patients. A total of 987 patients were interviewed and only those who had taken medication for their dental complaint were included in the study. Data were collected and analyzed by descriptive analysis using SPSS software. Results: The total number of interviewed patients was 987 (782 male and 205 females) of which 793 (80%) had taken medication to their dental complaints. Out of the 793 patients 637 (80%) had used self-prescribed antibiotics for their dental complaints. The level of education did not affect the behavior of self-medication as the percentage of such behavior was almost similar in different education groups. Self-prescribed antibiotics were used with employed patients (82%) more than unemployed patients (79%) but this was statistically insignificant. Patients who were healthy showed more prevalence for the use of self-prescribed antibiotics (87%) than unhealthy patients (75%). The major source of self-prescribed antibiotics was private pharmacies (93.6%). The main reason behind taking self-medication was an advice from a friend (80%). Conclusion: Self-prescribed antibiotics for common dental problems is a common practice among Saudi patients. Such problem needs to be addressed and controlled by patient's motivation and reinforced regulations related to dispense of antibiotics without prescription from private pharmacies.

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### 1. Introduction

With the increase of awareness and availability of knowledge related to medications, self-medication practice is widely spreading in developing countries. Currently high percentage of common health problems are managed by self-medication (Sawair et al., 2009). Antibiotic resistance is increasing and one of the important factors which lead to the emergence and spread of antibiotic resistance is the absence of regulation for the use of antibiotics (Choudhury et al., 2012). In Saudi Arabia, most antibiotics are available in private pharmacies without prescription rules. Most antibiotic at these pharmacies are available for patients without prescription which makes self-medication an easy practice. The exception includes a number of limited drugs that need special prescription. Few studies have investigated the self-medication prevalence in Saudi Arabia (Abahussain and Taha, 2007; Alghanim, 2011). Many reports have shown

that self-medications can increase the wastage of medication resources and the risk of microbe's resistance (Choudhury et al., 2012; Grigoryan et al., 2010; Moore et al., 2013; Widayati et al., 2011). Although self-medications may help in the treatment of minor illnesses, risks and benefits should be weighed as some serious problems may accompany the self-use of medications (Lawan et al., 2013).

Many patients who come for dental management of common dental complaints such as pain and swellings have a history of managing their complaint with home medications. The relation of self-medication and many factors related to patients have been reported and include the socioeconomic status as well as the level of education in addition to other factors (Fakunle and Watkins, 1976; Mohanna, 2010; Ndol et al., 2013; Obaseiki-Ebor et al., 1987). Some patients use antibiotics without accurate indications such as using them to cure any complaints

including pain. Effective surveys are needed to address the self-medication problem and the factors related to the spread of such problem.

This study aimed to investigate the self-prescribed antibiotics behavior of Saudi patients for common dental complaints.

## 2. Material and Methods

A single page survey was conducted for Saudi patients attending the oral and maxillofacial surgery clinics, College of Dentistry, King Saud University, Saudi Arabia or the dental clinics at College of Dentistry, Salman Bin Abdulaziz University, AlKhaej, Saudi Arabia. These clinics included the student's as well as the specialties clinics. The maxillofacial surgery department runs a total of ten students and consultants clinics per week with an average of 150 patients per week. The study sample was randomly selected from those patients attending these clinics for routine surgical management from September 2012 to September 2013. The questionnaire was filled by interviewing patients by the consultant or senior registrars. The questionnaire was validated by pretesting it on a small group of 32 patients. A total of 987 patients were interviewed and only those who had taken medication for their dental complaint were included in the study of self-prescribed antibiotics. All patients were informed that they were a part of a research which conducted at the department to investigate the self-medication prescription in Saudi patients. The questionnaire included questions related to age, gender, employment status, level of education, marital status, health status, antibiotics that were taken for the dental complaint, whether this antibiotic was a self-prescription or prescribed by a dentist, the source of antibiotic, dose of the antibiotic and for how long was it taken. The patients were also asked why they have taken a self-prescription. Data were collected and analyzed by descriptive analysis using SPSS version 16 software.

## 3. Results

The total number of interviewed patients was 987 (782 male and 205 females) of which 793 (80%) had taken medication to their dental complaints. From the 793 patients 637 (80%) had used self-prescribed antibiotics for their dental complaints. Table 1 shows the numbers of self-prescribed antibiotics related to age, gender, marital status, employment status, level of education and health status of the patients. The percentage of females who used self-prescribed antibiotics was more than the males. The level of education did not affect the behavior of self-medication as the percentage of such behavior was almost similar in different education groups.

Table 1: Numbers and percentages of self-prescribed antibiotics

	Subjects studied taken medication N=793	Numbers of Self-prescription	P vale
<b>Gender</b>			0.043
Male	641 (80.8)	506 (63.8)	
Female	152 (19.1)	131 (16.5)	
<b>Age</b>			0.053
15-25	218 (27.5)	186 (23.5)	
26-35	202 (25.5)	165 (20.8)	
36-45	224 (28.2)	169 (21.3)	
46-55	93 (11.7)	71 (8.9)	
>55	56 (7.0)	46 (5.8)	
<b>Marital status</b>			0.25
Married	655 (82.5)	531 (66.9)	
Unmarried	138 (17.4)	106 (13.3)	
<b>Education</b>			0.051
Less than high school	107 (13.5)	93 (11.7)	
High school	435 (54.8)	350 (44.1)	
Bachelor degree	233 (29.4)	180 (22.6)	
Higher education	18 (2.2)	14 (1.7)	
<b>Employment</b>			0.45
Employed	133 (16.7)	110 (13.8)	
Unemployed	660 (83.2)	527 (66.4)	
<b>Health status</b>			0.001
Healthy	475 (59.8)	360 (45.3)	
Have a disease	318 (40.1)	277 (34.9)	

Employed patients used self-prescribed antibiotics (82%) more than unemployed patients (79%) but this was statistically insignificant. Patients who were healthy showed more prevalence ( $P = 0.001$ ) for the use of self-prescribed antibiotics (87%) than unhealthy patients (75%), table 1.

The most common dental complaints of patients were pain (86%) followed by swelling (11%), table 2. These complaints were treated by medications mainly amoxicillin (86.6%) followed by Augmentin (10.7%), table 3. The source of self-prescribed antibiotics were private pharmacies (93.6%), home left medication (2.5%), friends (1.6%) and other sources (2.3%), table 4. The main reason for taking self-medication was an advice from a friend (80%) table 5. The duration of antibiotic usage prior to the dental visit was mainly one day (33.8%) followed by 4 days (28.2%) and 2 days (21.8%), table 6.

Table 2: Frequencies of dental complaints

Complaint	Frequency	Percentage
Pain	852	86.3
Swelling	112	11.3
others	23	2.3
Total	987	100.0

Table 3: Antibiotics used by patients for dental complaints

Antibiotic	Frequency	Percentage
Amoxicillin	687	86.6
Augmentin	85	10.7
Clindamycin	8	1.0
Others	13	1.6
Total	793	100.0

Table 4: Medication sources

Medication source	Frequency	Percentage
Private pharmacy	742	93.6
Home medications	20	2.5
Friends	13	1.6
others	18	2.3
Total	793	100.0

Table 5: Reasons for taking medications

Reason	Frequency	Percentage
Advice from friend	578	72.9
Searched the internet	59	7.4
others	156	19.7
Total	793	100

Table 6: Antibiotic duration

Antibiotic/ Duration	1 day	2 days	3 days	4 days	> 4 days
Amoxicillin	235	137	66	202	47
Augmentin	29	35	7	7	7
Clindamycin	0	0	0	8	0
Others	4	1	0	8	0
Total	268 (33.8)	173 (21.8)	73 (9.2)	225 (28.4)	54 (6.8)

#### 4. Discussions

Self-prescribed medications is an important issue within the healthcare systems which reflects the attitude of patients to manage themselves based on friend's advice or available information related to some medications. In the present study we found that 80% of dental patients visited our clinics for their dental complaints used self-prescribed medications mostly antibiotics. This high percentage may not be surprising as most of antibiotics in Saudi Arabia can be bought from private pharmacies without prescription. Although Saudi patients are eligible for free health services in the Kingdom, the main source for these self-medications used by patients in our study was the private pharmacies. These pharmacies may play a major role in spreading of self-medication practice. This is similar to other studies which have shown that private pharmacies are major source of self-medications (Berzanskyte et al., 2006; Cheaito et al., 2013; Grigoryan et al., 2008). Most of the previous studies investigated the self-medication within specific period ranging from 2 weeks to 12 months

(Awad et al., 2005; Bi et al., 2000; Sawair et al., 2009). In the current study we investigated the self-medication related to the current dental chief complaint of the patients. A high percentage (86%) among the female patients used self-medication although the number of female subjects in the present study was less than the male subjects due to the restriction of managing female patients in the male campus, College of Dentistry, King Saud University. These findings are in consistent with other studies (Carrasco-Garrido et al., 2009) and contradict a study which reported that men are more inclined to self-medication (Alghanim, 2011). This study was able to demonstrate that self-prescribed antibiotic for dental complaints were common in Saudi patients regardless of their educational level or employment status. Although most of our patients were unemployed they were young adults in high schools who are routinely supported financially by their families. It was clear that the most commonly used antibiotic is amoxicillin. The drug is a common self-prescribed drug and sometimes used incorrectly to manage pain as it is clear that the most common complaint of the patients in the current study was pain treated with antibiotic. Amoxicillin and Augmentin (amoxicillin-clavulanic acid combination) were reported to be the most common self-prescribed antibiotics in different countries (Abasaheed et al., 2009; Avorn and Solomon, 2000; Nyazema et al., 2007). The use of these drugs routinely as self-prescribed medication could lead to serious troubles in the future especially with the development of microbial resistance. Healthy patients in the current study showed more tendency to use self-prescribed antibiotics than those suffering from any disease. This contradicts some previous reports (Alghanim, 2011; Fuentes and Villa, 2008). The use of self-medication may be influenced by cultural beliefs where people use antibiotics as the first line of defense in managing any health problem. Even self-limiting viral diseases are also treated incorrectly with self-prescribed antibiotics. Most of the patients in the current study are confused about the period that the antibiotic should be taken. Most of these patients have taken the antibiotic for just one day. Such behavior could increase the risk of developing microbial resistance. In the present study the main reason for self-prescribed antibiotic was the advice from friends. In other previous studies it has been shown that several reasons influenced the self-medication practice such as difficult access to health services, lack of time to visit the care centers and the long waiting time in these centers (Alghanim, 2011; Sawair et al., 2009). Although the results of the present study were based on subjective information gathered from patients yet it can give a general idea about the current status of self-prescribed antibiotics for dental complaints by Saudi

patients. The practice of self-prescribed antibiotics in Saudi patients is worrying and reinforcement of rules and patient motivation is highly needed in the country to reduce such practice and prevent possible undesired consequences.

#### 4. Conclusions

Self-prescribed antibiotics for common dental problems is a common practice among Saudi patients. Such problem needs to be addressed and controlled by patient's motivation and reinforced regulations related to dispense of antibiotics without prescription from private pharmacies.

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