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Research Article

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Knowledge, Attitude and Practices towards Drug Prescription for Oral Mucosal Lesions in Saudi Arabia

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Abstract: Oral mucosal diseases are common in routine dental practices and significantly influence patients' quality of life. Dental students should be aware about the management of oral mucosal diseases as well as the major oral diseases such as dental caries, gingivitis and periodontitis. This study aimed to evaluate, attitudes and practices of dental students regarding management of certain oral mucosal conditions. This is a cross sectional KAP study conducted among dental students in Saudi Arabia. Inclusion criteria were students in 4th academic year or higher, since these students should study the pharmacological courses starting from the 4th academic year. The sample included 300 students to whom questionnaires were distributed. Chi-square test of homogeneity was used to detect significant differences in students' knowledge, attitudes and practices based on students' characteristics. The level of knowledge about the studied oral mucosal diseases was high in 62.7% of dental students, while only 2% had low level of knowledge. The attitude of the students was good in 48%, however 11.7% had poor attitude towards drug prescription of the medications for theses oral mucosal diseases. The practices of the dental students in prescription of medications during their clinical training were good in 16%, while it was poor in 31% of dental students. The knowledge regarding drug prescription for oral mucosal drugs were high among the majority of dental students, however the prescription practices were poor when compare to the level of knowledge.

Keywords: Antifungal, Oral lichen planus, Herpes, Aphthous ulcer, Management

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1. INTRODUCTION

Oral mucosal diseases are common complaints in the outpatient clinic which is caused by a variety of causes that includes local and systemic diseases, trauma, chemical causes, tobacco, and as side effects of certain medications[1,2]. Oral lesions are usually oral conditions or oral manifestations of systemic diseases. A study found 28.2% of American adults to have a diagnosed oral lesion with different prevalence rates. *Candida*-related mucosal lesions represented 8.7%, particularly among denture wearers and the traumatic lesions accounted for 5.7%, while herpes labialis and herpes gingivostomatitis was found among 1.6% of the adult population [3]. The prevalence of oral lichen planus among adults is varied from 0.5% to 2% [4,5], while oral submucous fibrosis is uncommon disease mainly affect population in southeastern Asia with a prevalence of 16 per 100,000 [6]. In Saudi Arabia, the prevalence of aphthous ulcers among females was 9.8% while 11% of Saudi females had lichen planus[7]. Pharmacists have been found to play an important role in improving dental health with willing to participate in dental health campaigns [8]. Due to causes such as time, lack of money, and fear of dental treatment, a considerable proportion of patients asking for advice from pharmacists instead of dentists or oral health specialist [9,10]. Thus, the dentist should have good communication with the pharmacists in addition to knowledge about medications used in the treatment of oral diseases. A study conducted in Dammam, Saudi Arabia, found a significant difference in practices of antifungal prescription between the internship students and other students [11]. Dental students should be aware about the management of oral mucosal diseases as well as the major oral diseases such as dental caries, gingivitis and periodontitis. The knowledge of dental students is expected to increase by the increase in educational level, and the dental practices are usually improved in internship year. This study aimed at assessment of the knowledge, attitudes and practices of dental students regarding management certain oral mucosal conditions include oral candidiasis, oral lichen planus, and herpes related lesions, recurrent aphthous ulcers, oral submucous fibrosis, and traumatic lesions of the oral mucosa.

2. METHODS

This is a cross sectional KAP study conducted among dental students in Saudi Arabia. Inclusion criteria were students in 4th academic year or higher, since these students should study the pharmacological courses starting from the 4th academic year. The sample included 300 students to whom questionnaires were distributed. The questionnaire contains 6 questions about students' characteristics and 12 questions investigating knowledge about drug prescription for the selected oral mucosal conditions. In addition, 12 questions inquiring about attitude and other 12 questions about practices of drug practice. The students were informed about their voluntary participation and withdrawal from the study, then written consents were obtained from all students who participated in this study. The data were coded anonymously and introduced into the computer to be analyzed using SPSS, version 22. The percentages and frequencies were calculated for the answers of questions and the percentages of correct answers were presented in the tables. Chi-square test of homogeneity was used to detect significant differences in students' knowledge, attitudes and practices based on characteristics such as gender, age, educational level, and GPA. The ethical approval for this study was obtained from College of Dentistry, Qassim Private Colleges.

3. STATISTICAL ANALYSIS

The data were coded and introduced into Statistical Package of Social Sciences (SPSS), Version 23. The descriptive statistics were calculated and presented in tables as frequency, percentage for categorical variable, while mean and standard deviation were used for numerical variables. The chi-square test was used to detect significant differences between categories at 0.05 alpha level.

4. RESULTS

A total of 300 dental students were included in this study, 67.7% of them were female and 32.3% were males. About 91% of the dental students aged 27 years old or younger, while only 2 dentists were more than 30 years old. The majority of the dental students were studying at private colleges (62.7%) and 96% have a high GPA. The dental students were in 4th academic year or higher and 30.7% were in internship year (table 1). The level of knowledge about the studied oral mucosal diseases was high in 62.7% of dental students, while only 2% had low level of knowledge. The attitude of the students was good in 48%, however 11.7% had poor attitude towards drug prescription of the medications for these oral mucosal diseases. The practices of the dental students in prescription of medications during their clinical training were good in 16%, while it was poor in 31% of dental students (table 2). The significant association was detected between gender and knowledge about prescription of medications for oral mucosal diseases. A higher proportion of female students had high level of knowledge than males ($p<0.001$). Additionally, a higher percentage of females practices good in prescription of medications for the oral mucosal diseases in comparison to males ($p=0.041$). The majority of students with low GPA (66.7%) had poor practices of drug prescription for the oral mucosal diseases compared to only 29.5% of females ($p= 0.016$). The academic level of the students influenced significantly the practices regarding drug prescription and 22.8% of the internship students had good practices compared to 13% of the students in 4th - 6th academic year (Table 3). Table 4 -6 showed the correct responses of dental students to each question regarding knowledge, attitude and practices towards drug prescription for oral mucosal lesions. About the knowledge questions, generally students demonstrated higher knowledge of the disease etiology than knowledge of the first line used in the treatment of that disease. The highest percentage of students (93.3%) answered correctly the question of knowledge about the etiology of oral candidiasis, while the lowest percentages of students (42.7%) respond correctly to the question "Are you aware of the first line of treatment for patients with Oral Submucous Fibrosis" (table 4). The attitude of students was good, was correct in 82.3% of them answered the question of management of traumatic ulcers. Only 44.7% of the students respond correctly to the question of attitude toward treatment of a case with oral submucous fibrosis (table 5). Regarding practices, 77% and 61.3% of the students reported wrong practices in the prescription of first line of treatment for recurrent aphthous ulcers and oral lichen planus respectively. However, 60% and 58% of them reported correct practices in aware about the availability of drugs used in the treatment of *candida* and recurrent aphthous ulcers respectively (table 6).

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Table 1.Demographic characteristics of the respondents, (n = 300)		
Variables	**Frequency**	**Percent (%)**
Gender		
	97	32.3
Female	203	67.7
Age		
20-23	155	51.7
24-27	118	39.3
28-30	25	8.3
>30 years old	2	0.6
Collage		
Private	188	62.7
Governmental	112	37.3
GPA		
High GPA	288	96
Low GPA	12	4
Academic year		
4th year	70	23.3
5th year	65	21.7
6th year	73	24.3
Internship	92	30.7

Table 2. Knowledge, attitude and practices of drug prescription for oral mucosal diseases among dental students		
Variables	**Frequency**	**Percent (%)**
Level of knowledge		
High	188	62.7
Moderate	106	35.3
Low	6	2
Attitudes		
Good	145	48.3
Moderate	120	40.0
Low	35	11.7
Practices		
Good	48	16
Moderate	159	53
Low	93	31

Table 3. Significant association between students' characteristics with knowledge, attitudes and practices of drug prescription for oral mucosal diseases					
Variables	**Knowledge about prescription of medications for oral mucosal diseases**			**Chi-square**	**P value**
Gender	**Low**	**Moderate**	**High**		
Male	4	49	44	19.4	<0.001
	4.1%	50.5%	45.4%		
Female	2	57	144		
	1.0%	28.1%	70.9%		
Attitudes towards prescription of medications for the oral mucosal diseases					
Age	**Poor**	**Moderate**	**Good**		
≤ 23 years old	14	60	81	3.3	0.197
	9.0%	38.7%	52.3%		
>23 years old	21	60	63		
	14.6%	41.7%	43.8%		
Practices of drug prescription for the oral mucosal diseases					
Gender	**Poor**	**Moderate**	**Good**		
Male	28	60	9	6.4	0.041
	28.9%	61.9%	9.3%		
Female	65	99	39		
	32.0%	48.8%	19.2%		
GPA					
High	85	157	46	8.2	0.016

	29.5%	54.5%	16.0%		
Low	8	2	2		
	66.7%	16.7%	16.7%		
Academic year					
4th - 6th academic	74	107	27	8.8	0.013
year	35.6%	51.4%	13.0%		
Internship	19	52	21		
	20.7%	56.5%	22.8%		

Table 4. The distribution of correct response regarding Knowledge about prescription of medications for oral mucosal diseases

S.No	Question	N (%) Response	
		No (Wrong)	Yes (Correct)
Fungal			
1	Oral candidiasis is which of the following?	20 (6.7)	280 (93.3)
2	Are you aware about the first line of treatment for patients with Oral Candidiasis?	62 (20.7)	238 (79.3)
Viral			
3	Oral herpes simplex is which of the following?	16 (5.3)	284 (94.7)
4	Are you aware of the first line of treatment for patients with Oral herpes simplex?	104 (34.7)	196 (65.3)
Recurrent Aphthous Ulcer			
5	Recurrent Aphthous Stomatitis is which of the following?	54 (18)	246 (82)
6	Are you aware of the first line of treatment for patients with Recurrent Aphthous Stomatitis?	98 (32.7)	202 (67.3)
Oral Submucous Fibrosis			
7	Oral Submucous Fibrosis is which of the following?	41 (13.7)	259 (86.3)
8	Are you aware of the first line of treatment for patients with Oral Submucous Fibrosis?	172 (57.3)	128 (42.7)
Traumatic Ulcer			
9	Traumatic ulcer is which of the following?	91 (30.3)	209 (69.7)
10	Are you aware of the first line of treatment for patients with Traumatic ulcer?	83 (27.7)	217 (72.3)
Oral Lichen Planus			
11	Oral lichen planus is which of the following?	46 (15.3)	254 (84.7)
	Are you aware of the first line of treatment for patients with Oral lichen planus?	128 (42.7)	172 (57.3)

Table 5. Distribution of correct responses regarding attitudes towards prescription of medications for the oral mucosal diseases

S. No	Question	N (%) Response	
		No (Wrong)	Yes (Correct)
Fungal			
1	In case you have a patient with Oral Candidiasis in your clinic, how will you manage the case?	65 (21.7)	235 (78.3)
2	In case you have a patient with Oral Candidiasis and you are aware of the treatment you will:	85 (28.3)	215 (71.7)
Viral			
3	In case you have a patient with Oral herpes simplex in your clinic, how will you manage the case?	76 (25.3)	224 (74.7)
4	In case you have a patient with Oral herpes simplex and you are aware of the treatment you will:	100 (33.3)	200 (66.7)
Recurrent Aphthous Ulcer			
5	In case you have a patient with Recurrent Aphthous Stomatitis in your clinic, how will you manage the case?	66 (22)	234 (78)
6	In case you have a patient with Recurrent Aphthous Stomatitis and you are aware of the treatment you will:	84 (28)	216 (72)
Oral Submucous Fibrosis			
7	In case you have a patient with Oral Submucous Fibrosis in your clinic, how will you manage the case?	145 (48.3)	155 (51.7)
8	In case you have a patient with Oral Submucous Fibrosis and you are aware of the	166 (55.3)	134 (44.7)

	treatment you will:		
Traumatic Ulcer			
9	In case you have a patient with Traumatic ulcer in your clinic, how will you manage the case?	53 (17.7)	247 (82.3)
10	In case you have a patient with Traumatic ulcer and you are aware of the treatment you will:	109 (36.3)	191 (63.7)
Oral Lichen Planus			
11	In case you have a patient with Oral lichen planus in your clinic, how will you manage the case?	88 (29.3)	212 (70.7)
12	In case you have a patient with Oral lichen planus and you are aware of the treatment you will:	140 (46.7)	160 (53.3)

Table (6): Distribution of correct responses regarding practices of drug prescription for the oral mucosal diseases

S. No	Question	N (%) Response	
		No (Wrong)	Yes (Correct)
	Fungal		
1	What will you generally prescribe as the first line of treatment for oral candidiasis among the following?	150 (50)	150 (50)
2	Are you aware about the availability of the drug in your local pharmacy?	120 (40)	180 (60)
	Viral		
3	What will you generally prescribe as the first line of treatment Oral herpes simplex among the following?	139 (46.3)	161 (53.7)
4	Are you aware about the availability of the drug in your local pharmacy?	131 (43.7)	169 (56.3)
	Recurrent Aphthous Ulcer		
5	What will you generally prescribe as the first line of treatment Recurrent Aphthous Stomatitisamong the following?	231 (77)	69 (23)
6	Are you aware about the availability of the drug in your local pharmacy?	126 (42)	174 (58)
	Oral Submucous Fibrosis		
7	What will you generally prescribe as the first line of treatment Oral Submucous Fibrosis among the following?	172 (57.3)	128 (42.7)
8	Are you aware about the availability of the drug in your local pharmacy?	202 (67.3)	98 (32.7)
	Traumatic Ulcer		
9	What will you generally prescribe as the first line of Traumatic ulcer among the following?	173 (57.7)	127 (42.3)
10	Are you aware about the availability of the drug in your local pharmacy?	135 (45)	165 (55)
	Oral Lichen Planus		
11	What will you generally prescribe as the first line of Oral lichen planus among the following?	184 (61.3)	116 (38.7)
12	Are you aware about the availability of the drug in your local pharmacy?	160 (53.3)	140 (46.7)

5 DISCUSSION

Oral mucosal diseases are common conditions which may be a result of fungal, viral, immunological, chemical or physical causes [12]. Dentists should have the adequate knowledge to manage these disorders, as they are strongly associated with patients' quality of life[13]. In dental schools, treatment of oral mucosal lesions is part of oral medicine branches which may be relatively neglected when compared to other branches such as conservative dentistry, prosthodontics, orthodontics and oral surgery. Most of oral lesions need only supportive treatment or follow up with no definitive therapy which may make dental students unaware about these conditions in comparison to other oral diseases. This study aimed to assess the knowledge, attitude and practices of dental students in prescription of medications for treatment of oral mucosal lesions. This study found a high level of knowledge about the studied oral mucosal diseases in 63% of dental students, while only 2% had low level of knowledge. This is comparable to the level of knowledge found Singh *et al*. about other important issues such as infection control to which 69% of students had adequate knowledge [14]. The majority of studies which evaluated the prescription practices of antimicrobial drugs in dentistry focused on antibiotic prescription[15], while few studies assessed the prescription patterns of antifungal drugs [16,17]. The attitude of the students was good in 48%, however 11.7% had poor attitude towards drug prescription of the medications for these oral mucosal diseases. A study conducted among dental practitioners found only 64-70% of them aware about contraindications or

side effects associated with antifungal drugs such as azole antifungals [17]. The undergraduate students in Saudi universities usually learned the drug prescription in 2 pharmacological courses, however these courses are theoretical does not improve significantly the prescriptions skills of students. Therefore, dental students in this study showed higher level of prescription knowledge in comparison to prescription practices [11]. The present study, demonstrated a good prescription practices in higher percentage of internship students compared to other students. Similarly, a study conducted in Dammam, Saudi Arabia, found a significant difference in practices of antifungal prescription between the internship students and other students [11]. The knowledge of students is expected to increase by the increase in educational level, and the dental practices are usually improved in internship year. The findings of Moura et al. study found that knowledge improved as the academic level increased [18]. A study of Alali et al. found an increase in students' knowledge about drug prescription after educational intervention using phone application allowed them to access the database about drugs in Saudi Arabia, their names, uses and adverse effects [11]. The present study found a higher proportion of female students had a high level of knowledge and better prescription practices than those in males. This difference can be attributed to gender segregation in colleges in Saudi Arabia, where male and females study in different sections. A study in learning styles among Saudi medical students have found female preferred multimodal learning which usually associated with higher GPA in comparison to unimodal students [19]. In our study, students with low GPA had worse practices of drug prescriptions in comparison to students with high GPA. It is logical findings since students with better academic performance are expected to have better dental practices. The main limitation of this study is the lack of validated scale that can measure the knowledge, attitude and practice regarding drug prescriptions of oral diseases. Furthermore, few studies have been found in the literature about the drug prescription in oral diseases.

6 CONCLUSION

The knowledge regarding drug prescription for oral mucosal drugs were high among the majority of dental students, however the prescription practices were poor when compared to the level of knowledge. Additionally, about half of the dental students had good attitude towards prescription of drugs for oral mucosal diseases. Gender influenced significantly the knowledge and practices of drug prescription, while the GPA and academic year affect only the practices of drug prescription.

7 AUTHORS CONTRIBUTION STATEMENT

Dr. Horiyah conceptualized and planned for the research in addition to contribution in data analysis and results discussion. Dr. Alanood contributed in planning of data collection and in writing the article. Kumar supervised and contributed significantly to the article writing. Dr Deepti supervised the work and contributed to the discussion of the findings. Dr. Khalid participated in the supervision, planning and writing of the article.

8. CONFLICT OF INTEREST

Conflict of interest declared none.

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