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Research Article

The Ability of Undergraduate Dental Students and Interns to Diagnose and Manage Oral Ulcers

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Abstract

Background: Dental practitioners should be well aware of diagnosing and treating oral ulcers. During dental education, undergraduates and interns should be given adequate knowledge about oral ulcers. Thus, the present study was conducted to assess the knowledge and awareness of oral ulcers among undergraduate dental students and interns at King Khalid University.

Methodology: The present cross-sectional study was a questionnaire-based study conducted from March 2021 to May 2021. A self-administered structured questionnaire was used to assess the demographic variables, information regarding knowledge and awareness about oral ulcers.

Results: A total of 307 participants aged 20 - 25yrs were included in the study, with 77.52% undergraduates of different education levels and 22.47% interns. 15 questions were asked to assess the knowledge and awareness among dental students about oral ulcers. Statistically, the relation between answers to all questions was derived using Chi-square statistical analysis, and a significant relation was observed among all options for most of the questions.

Conclusion: The study concluded that dental students were aware of oral ulcers but still require adequate knowledge for careful examination and identification of the underlying causes and management of oral ulcers. Thus, we advocate that specific awareness courses should be conducted among dental students so that oral ulcers can be diagnosed at early stages and managed effectively.

Keywords: *Dental Undergraduates; Interns; Knowledge; Oral Ulcers*

Introduction

Occurrence of oral ulcers is the common complaint of patients in the out-patient department, with a prevalence rate of 4% worldwide [1]. It is frequently encountered in daily practice, causing a lot of pain and distress to the patients throughout their life. The most common etiological factors include local causes like trauma (due to xerostomia and epithelial atrophy), burns and self-elicited injuries that make the epithelial lining more fragile and easily breached. Other factors include aphthae, malignant conditions, autoimmune diseases, underlying systemic diseases, skin disorders, damage due to immune defects (HIV, leukemia, infections like herpes viruses), or nutritional disorders (like vitamin deficiencies) [2].

Oral ulcers may appear individually or as multiple ulcers. Once formed, they are maintained by inflammation or secondary infection [3]. Mostly, oral ulcers are benign, and they resolve spontaneously. However, few that do not heal are malignant and appear as a sign of oral cancer [4].

The diagnosis of mouth ulcers is usually based on thorough medical history, oral examination and examination of any other involved area. The ulcers are usually examined for their location, number, size, color, surface texture, margins and bleeding [5]. Treatment of ulcers

depends on its etiology, but it is symptomatic when the underlying cause is unknown. Most of the oral ulcers heal completely without any intervention. Treatment can also range from removing etiological factors to appropriate medication [6].

Patients suffering from oral ulcers generally present to a general physician or a dental practitioner. Dental practitioners should be well aware of diagnosing and treating oral ulcers. During dental education, undergraduates and interns should be given adequate knowledge about oral ulcers. Thus, the present study was conducted to assess the knowledge and awareness of oral ulcers among undergraduate dental students and interns at King Khalid University, Saudi Arabia.

Materials and Methods

The present cross-sectional study was a questionnaire-based study conducted from March 2021 to May 2021. The self-administered structured questionnaire was used to assess the demographic variables, information regarding diagnosis, signs and symptoms, and management of oral ulcers. The validity of the questionnaire was assessed and was observed to be appropriate ($\alpha = 0.84$). The study was conducted following the Declaration of Helsinki and was approved by the King Khalid University College of Dentistry Institutional review board no. IRB/KKUCOD/ETH/2020-21-057. Informed written consent was obtained from all subjects before their enrolment in this study. The demographic data was collected, and to analyze the knowledge and awareness of undergraduates and interns, 15 well-constructed questions were framed and asked. The response to all these questions was recorded. General characteristics like knowledge, diagnosis, signs and symptoms, treatment, and management of oral ulcers, were recorded by asking questions with different options. Various factors determining knowledge of oral ulcers were analyzed by asking questions with three options of "Yes", "No" and "occasionally".

The data obtained was subjected to statistical analysis using IBM SPSS version 20.0 software. Descriptive statistics, i.e. frequencies and percentages, were computed. The comparative analysis was done using Chi-square statistical analysis.

Results

Demographic data was recorded in terms of the education level of undergraduates and interns (Table 1). A total of 307 participants aged 20 - 25 yrs were included in the study, with 77.52% undergraduates of different education levels and 22.47% interns having an insignificant difference statistically (p-value > 0.05).

Education	No. of subjects (n = 307)	Percentage
8th	54	17.58958
9th	48	15.63518
10th	51	16.61238
11th	39	12.70358
12th	46	14.98371
Intern	69	22.47557
Chi square	14.231	
p-value	> 0.05 (Insignificant)	

Table 1: *Distribution of study subjects according to level of education.*

Table 2 showed the responses to 15 questions asked to access the knowledge and related factors observed among undergraduates and interns for oral ulcers. Maximum subjects examine oral mucosa often (74.59%) and take history to identify high-risk patients. 34.20195% were of the view that trauma is the main etiological factor for oral ulcers. 79.15% advocate the use of biopsy for non-healing ulcers to

exclude malignancy. Maximum (59.28%) subjects were aware of signs and symptoms of aphthous ulcers, and 69.38% knew the management of traumatic ulcers. 44.2% advocate the use of quadra gel for treating oral ulcers. It has been observed that maximum participants (43.64%) were not confident of diagnosing oral ulcers from clinical appearance, with a statistically significant difference among the responses. 87.62% of participants mentioned that they require more information about oral ulcers.

Questions	Options	No. of subjects	Percentage	Chi square	p-value
Q1. Do you examine patient's oral mucosa routinely?	Yes	229	74.59283	9.240	< 0.05
	No	20	6.514658		
	Occasionally	58	18.89251		
Q2. Do you always take patient's history to identify high-risk patients?	Yes	176	57.32899	12.994	< 0.05
	No	32	10.42345		
	Occasionally	99	32.24756		
Q3. What do you think is the main cause of ulcers in your opinion?	Trauma (mechanical, chemical, thermal)	105	34.20195	11.902	< 0.05
	Infections	41	13.35505		
	Neoplasms	3	0.977199		
	Stress or anxiety	92	29.96743		
	Immune-mediated diseases	28	9.120521		
	Poor oral hygiene	24	7.81759		
	Drug reactions	14	4.560261		
Q4. When do you think oral ulcers are worrying?	Non healing ulcers	239	77.85016	31.900	< 0.05
	When ulcer gets red	25	8.143322		
	When ulcer is painful?	43	14.00651		
Q5. Would you do biopsy if a patient came with a non-healing ulcer that started 1 month ago?	Yes	243	79.15309	41.782	< 0.05
	No	64	20.84691		
Q6. If yes, Why?	To exclude malignancy	227	73.94137	20.870	< 0.05
	Not required	59	19.21824		
	Every ulcer needs a biopsy	21	6.840391		
Q7. What of these is a sign or symptom of an aphthous ulcer?	The ulcer cannot be painful	54	17.58958	14.451	< 0.05
	Begins as a round yellowish elevated spot surrounded by a red halo.	182	59.28339		
	The ulcer is not healing within 3 weeks.	71	23.12704		
Q8. What will be your first management of traumatic oral ulcer?	The use of an antiseptic or topical anti-inflammatory.	35	11.40065	20.623	< 0.05
	Use of a warm saline mouthwash or provision of topical benzydamine spray. chlorhexidine or	59	19.21824		
	Removal of the cause	213	69.38111		

Q9. What is the most commonly used topical therapeutic for the treatment of mouth ulcers?	Quadra gel	136	44.29967	32.881	> 0.05
	Hexigel	118	38.43648		
	Rexidin M	53	17.26384		
Q10. If the onset of ulceration coincides with the initiation of a new systemic medicine, would you refer the patient to a GP?	Yes	202	65.79805	25.991	> 0.05
	No	105	34.20195		
Q11. As regards diagnosing oral ulcers from clinical appearance, do you feel:	Not so confident	134	43.64821	22.771	< 0.05
	Unconfident	35	11.40065		
	Confident	117	38.11075		
	Very confident	21	6.840391		
Q12. A 6-year-old boy presents with a large oral ulcer that developed three days ago and has been slowly enlarging. The lesion is shallow but very painful. Is the diagnosis? A large aphthous	Yes	197	64.16938	34.881	> 0.05
	No	110	35.83062		
Q13. What is the management of the previous question?	Antibiotics	123	40.06515	23.512	< 0.05
	Symptoms management	168	54.72313		
	No management needed	16	5.211726		
Q14. A tongue lesion for 6 months, after he realized that he had bite his tongue. The lesion enlarged, with increasing pain, over time. He had no history of smoking or alcohol consumption. The intra...	Yes	229	74.59283	15.881	< 0.05
	No	78	25.40717		
Q15. Would you like more information or training on oral ulcers?	Yes	269	87.62215	21.001	< 0.05
	No	38	12.37785		

Table 2: *Distribution of study subjects according to questions asked.*
p-value < 0.05 is significant.

Statistically, the relation between answers to all questions was derived using Chi-square statistical analysis, and a significant relation was observed among all options for each question, except in terms of referral to a general practitioner and therapeutic management of oral ulcers.

Discussion

A total of 307 participants aged 20 - 25 yrs participated in the study, with 77.52% undergraduates of different education levels and 22.47% interns. Maximum subjects examined oral mucosa often (74.59%) and took history to identify high-risk patients. In the present study, maximum subjects reported that trauma was the main etiological factor for oral ulcers. In contrast to our study, Abitha ST., *et al.* [3]

observed that stress (26%) was the most common triggering factor, followed by spicy food consumption. In a study conducted by Ajmal., *et al*. [7] 70% of participants correlate the onset of ulcer with certain specific factors; 91% advocated stress being the major causative agent of oral ulcers.

It has been observed that the most important is to diagnose malignant ulcers, typically squamous carcinomas, at an earlier stage for better prognosis [8,9]. 79.15% advocate the use of biopsy for non-healing ulcers to exclude malignancy. Maximum (59.28%) subjects were aware of signs and symptoms of aphthous ulcers, and 69.38% knew the management of traumatic ulcers. 44.2% advocated the use of quadra gel for treating oral ulcers.

The literature reveals that few dental and medical students receive specific training in diagnosing and treating oral ulcers [10,11]. In our study, it has been observed that maximum participants (43.64%) were not confident of diagnosing oral ulcers from clinical appearance, with a statistically significant difference among the responses.

The etiopathogenesis of oral ulcers is not yet clear. Various treatment strategies should be directed towards giving symptomatic relief by relieving pain, increasing the duration of ulcer-free periods, and accelerating the healing of ulcers [12]. Most people consider oral ulcers as a simple problem that would heal eventually in a few days. Few feel that oral ulcers are not a dental problem. Thus, they do not consult the dentist in time [13].

It is required that understanding the prevalence and distribution of oral ulcers among the dental practitioners will give an insight into factors responsible for and timely management of oral ulcers among patients [14,15]. Although dental students are being educated regarding oral ulcers, their diagnosis and management, 87.62% of study participants mentioned that they require more information about oral ulcers.

Our study provides important information regarding the knowledge and awareness among dental students about oral ulcers in King Khalid University, Saudi Arabia. In literature, there is a lack of similar studies in the region; thus, no conclusion can be drawn regarding the exact knowledge among dental students regarding diagnosis, symptoms and management of oral ulcers.

Limitations of the Study

Our study was conducted on limited sample size; thus, future studies should be conducted with an increased sample size. Our study evaluated limited practice-related questions among dental students, thus in the future, more demographic variables and practice parameters should be studied. Future studies should be conducted comparing knowledge of dental and medical students regarding oral ulcers. Dental students' and dental practitioner's perspectives should also be compared in the future.

Conclusion

We observed that dental students were aware of oral ulcers but still require adequate knowledge for careful examination and identification of the underlying causes and management of oral ulcers. The early and correct diagnosis of oral ulcers by the dental practitioner will provide effective management of the condition to the patient. Thus, we advocate that specific clinical courses should be conducted among dental students so that oral ulcers can be diagnosed at early stages and managed effectively.

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