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Research Article

The Attitude of Health Practitioners Toward the Oral Medicine Specialty in Saudi Arabia

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Abstract

Objectives: Major domains of knowledge and clinical expertise in oral medicine include oral mucosal and salivary gland disorders; temporomandibular joint dysfunction, orofacial pain and neurosensory disorders, along with managing the care of medically complex patients. The objective of the present study was to assess attitudes toward the oral medicine specialty among healthcare providers in Saudi Arabia.

Methods: An observational cross-sectional study was undertaken May-June 2022 by using a structured online questionnaire asking about the most difficult/challenging case scenarios to diagnose and/or treat in oral medicine, along with other related questions. Participants were from different healthcare specialties working in different cities in Saudi Arabia.

Results: A total of 321 participants answered the study questionnaire, and 84.42% reported that they had heard of the oral medicine specialty and 58.57% reported that they had consulted or referred a case to an oral medicine specialist. Participants reported high scores regarding hematologic malignancies as the most challenging cases to diagnose and oral lichen planus and/or lichenoid reactions as the most difficult to treat. Participants with dental education backgrounds were significantly more likely to think hospitals should hire an oral medicine specialist than were physicians.

Conclusion: The present evidence indicates that there is a lack of knowledge and awareness about the oral medicine specialty and its importance in oral health related disciplines; hence, more efforts should be focused on reinforcing the importance of the oral medicine specialty in health care curricula, as well as in the healthcare setting in Saudi Arabia.

Keywords: *Attitude; Medical Students; Dental Students; Oral Medicine Specialty; Saudi Arabia*

Abbreviations

OM: Oral Medicine; AAOM: American Academy of Oral Medicine; ABHS= Arab Board of Health Specialization

Introduction

The term aphtha was used for the first time by Hippocratic physicians to indicate a painful disease. Historically, the Hippocratic collection divided diseases from natural causes into two main categories: external and internal. The oral diseases were in the great majority external, such as ulcers, inflammations, abscesses and tumors of the epiglottis, mouth, tongue, palate, uvula and sublingual area, in addition to oral manifestations of systemic diseases. The therapeutic approach to oral diseases proceeded step by step, starting with simple regimens and progressing to invasive techniques. With the aim of avoiding adverse events, special attention was paid to the correct timing of surgery and the maintenance of a patient's health [1]. Today, oral medicine (OM) is a dental specialty concerned with the provision of diagnosis and non-surgical treatment to patients with a variety of oral conditions that commonly affect the head and neck region [2].

In OM, treating patients with persistent, painful, drastically altering, or even fatal illnesses is a frequent occurrence. Although the practice of OM has close ties to a number of other dental specialties, including geriatric dentistry, oral and maxillofacial surgery, periodontology, pediatric dentistry, and special care dentistry, it also has strong ties to a number of medical specialties, including dermatology, hematology, immunology and infectious diseases, pathology, gastroenterology, hepatology, imaging, neurology, oncology, and otorhinolaryngology. Because OM is at the intersection of medicine and dentistry, it should ideally serve as an example of interdisciplinary cooperation [3].

Over the past few decades, there have been substantial advancements in clinical, educational, and research areas related to OM. Despite the fact that it was first described as a specialization many years ago, it is still regarded as a young specialty in many countries, including the United States, where it is one that is just starting to gain popularity [4].

OM has been recognized as a specialty by the American Board of Dental Specialties in 2015, OM specialists are now better equipped to significantly improve the provision of oral healthcare to patients with complex medical conditions [5]. Several reports noted that OM clinical practice was quite varied across nations, including the United States, European countries, and Australia. Thus, a consistent view of OM training and practice throughout the world is still lacking [6].

The connection between oral indications and foundational illness is progressively apparent [7]. The increase in patients' ages and the development of new progressed medicines have prompted an expansion in the weight of oral illness because of the wide scope of aftereffects [8]. Also, improved mindfulness and information about the relationship of oral illnesses and oral indications to fundamental infections ought to be reflected in the impression of doctors about the accessibility of OM healthcare providers, the kind of administration that these experts may advise, and the advantage thereof for the patient's general health and related quality of life.

Aim of the Study

The aim of the present study was to assess the attitudes of healthcare practitioners toward the OM specialty in Saudi Arabia and to briefly explore the implications of the revealed situation.

Methods

This cross-sectional study evaluated the attitudes of healthcare practitioners toward the OM specialty in Saudi Arabia. The participants were selected from all universities and hospitals in Saudi Arabia, including governmental, private, and public healthcare centers. The inclusion criteria were a currently working healthcare provider, student, or worker.

Participants first signed an informed consent before answering a soft copy survey in their leisure time. The questionnaire was distributed online and took approximately 4 - 6 minutes to complete. The questionnaire was adapted from a previous study [9] and was composed of 15 questions. Some questions had one possible answer, and for others, participants could select more than one answer. The questions included age, gender, qualification, region of practice in Saudi Arabia, field of study, previous knowledge about OM, previous referral to an OM doctor, and previous experience with OM. Then the questionnaire asked about the most difficult/challenging to diagnose and/or treat disorders in OM. To answer that question, participants could choose from among the following options: oral lichen planus/lichenoid reactions, oral manifestation of systemic lupus, oral manifestation of vesiculobullous diseases, oral manifestation of hematologic malignancies, graft versus host disease (after an allogeneic transplant), salivary gland diseases, oral ulcers, oral premalignant conditions such as leukoplakia, and oral infection (viral, fungal, bacterial). SPSS software (IBM Corp., Armonk, NY) was used for data analysis, with the significance level of $p = 0.05$.

Results

A total of 321 participants answered the study questionnaire. The demographic data for the participants are displayed in table 1. Among the participants, 84.42% reported that they had heard about the OM subspecialty in dentistry, and 58.57% reported that they had consulted on or referred a case to an OM doctor.

Variable		n	%
Age	20 - 30	217	67.60%
	30 - 50	101	31.46%
	> 50	3	0.93%
Gender	Male	105	32.71%
	Female	216	67.29%
Qualification	Student	61	19.00%
	Intern	37	11.53%
	Resident	164	51.09%
	Specialist/consultant	59	18.38%
Region	East	34	10.59%
	West	212	66.04%
	Central	33	10.28%
	North	36	11.21%
	South	6	1.87%
Specialty	Dentistry	231	71.96%
	Medicine	90	28.04%

Table 1: *Participant demographic variables.*

When the participants were asked about the most challenging or difficult case to diagnose or treat among OM cases, their answers varied as shown in table 2.

Case	Difficult/challenging to diagnose in oral medicine		Difficult/challenging to treat in oral medicine	
	N	%	N	%
Oral lichen planus/lichenoid reactions	91	28.35%	142	44.24%
Oral manifestation of systemic lupus	109	33.96%	107	33.33%
Oral manifestation of vesiculobullous diseases	109	33.96%	116	36.14%
Oral manifestations of hematologic malignancies	133	41.43%	126	39.25%
Graft versus host disease (after an allogeneic transplant)	103	32.09%	99	30.84%
Salivary gland diseases	60	18.69%	79	24.61%
Oral ulcers	47	14.64%	63	19.63%
Oral premalignant conditions, such as leukoplakia	126	39.25%	115	35.83%
Oral infection (viral, fungal, bacterial)	44	13.71%	67	20.87%
*Participants were able to select more than one case.				

Table 2: *Participant answers regarding the most challenging or difficult cases to diagnose or treat in oral medicine.*

When the participants were asked if patients who were going to undergo chemotherapy or radiotherapy should be referred for dental clearance, 60.44% answered yes, 15.26% answered no and 24.30% were not sure. When the participants were asked if patients who are to undergo bisphosphonates treatment should be referred for dental clearance, 48.29% answered yes, 16.82% answered no and 34.89% were not sure.

The participants were asked about their perception of the people with the most knowledge about OM from among a selection of options, and they could provide more than one answer. The answers are provided in figure 1.

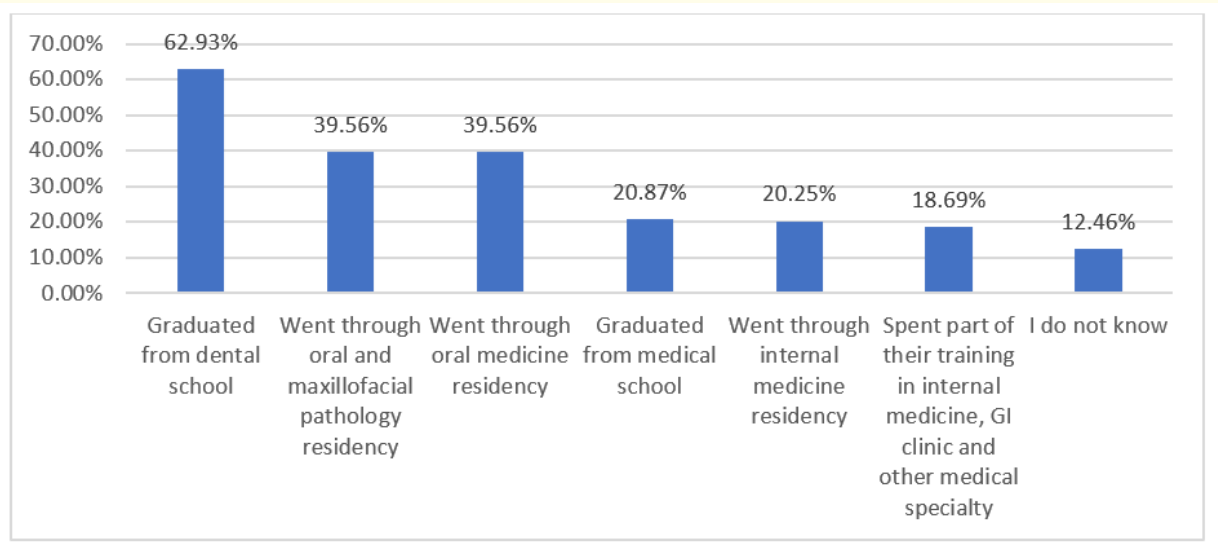

Figure 1: *Participants' perceptions of practitioners with the most knowledge about oral medicine.*

Two questions investigated the perceptions of the participants about the future of OM as a career, and the answers are shown in table 3. These questions were tested against gender and specialty using a chi-square test. Dentists were significantly more likely to think hospitals should hire OM specialists and to specialize in OM as a career than were medical professionals. Gender was not a significant variable with either of those questions.

Question		Gender		p-value	Specialty		p-value
		Male n (%)	Female n (%)		Dentistry n (%)	Medicine n (%)	
Do you think the hospital should hire an oral medicine specialist?	Yes	85 (80.95%)	172 (79.63%)	0.960	195 (84.42%)	62 (68.89%)	0.007*
	No	8 (7.62%)	13 (6.02%)		11 (4.76%)	10 (11.11%)	
	Not sure	12 (11.43%)	31 (14.35%)		25 (10.82%)	18 (20.00%)	
Do you want to specialize in oral medicine as a career?	Yes	40 (38.10%)	78 (36.11%)	0.729	94 (40.69%)	24 (26.67%)	0.019*
	No	65 (61.90%)	138 (63.89%)		137 (59.31%)	66 (73.33%)	

Table 3: *Questions investigating the perceptions of the participants about the future of oral medicine as a career.*

Discussion

The clinical symptoms and signs, pathogenesis, prognosis, and therapeutic approach of a large number of oral diseases have all been described in great detail by the Hippocratic physicians, and there are indications that the first systematic approach to OM originated in the Hippocratic corpus. Hippocratic physicians described and documented as precisely as possible a great number of related oral conditions, including ulcers, inflammation, abscesses, and tumors [1].

The field of OM is considered to be a representative example of a specialty that makes a profound link between medicine and dentistry. It is characterized as the oral consideration and therapeutic intervention for patients with medically complex circumstances, and thus it is concerned with the provision of diagnosis and non-surgical care to patients with a variety of conditions affecting the orofacial region and which influence the oral and maxillofacial complex [4].

OM experts are prepared to deal with a wide range of illnesses that present in the mouth, including, for example, ulcerative and vesiculobullous disorders, autoimmune-mediated diseases, and head and neck malignancies [10]. Additionally, they can give dental consideration to restoratively medically compromised patients.

By virtue of its many applications, medical specialties develop aiming to respond to clinical need. OM was created to manage patients with complex oral mucosal manifestations of systemic conditions; therefore, it has been defined by the American Academy of Oral Medicine (AAOM) as the "discipline of dentistry concerned with the oral healthcare of medically complex patients-including the diagnosis and management of medical conditions that affect the oral and maxillofacial region" [11].

In the majority of studies, OM was found to be a recognized specialty, a discrete field of study, or an area that was actively emerging. However, OM training positions are still considered limited compared with other dental specialties [4].

The startlingly high percentage of OM residents who participated in taught OM postgraduate training programs is noteworthy because it shows that younger graduates transitioning into OM practice recognize the need for more specialized training. It has been advocated that training in both medicine and science is necessary to enhance scholarship by creating vital connections between dental and medical education [12].

OM practitioners deal with a variety of conditions affecting the orofacial region, with the management of oral mucosal diseases representing their main activity. In the present survey, the data suggested that OM should be primarily practiced in public or university hospitals. This mirrors data from previous surveys investigating OM practice in non-European countries, such as the United States [10,13]. Conversely, in studies conducted in Middle East countries, there is a lack of information available on these specialty training programs, and there is a lack of guidance provided on career opportunities in these specialties that may have had an effect on recent dental graduates' desire to pursue a career in OM [14].

These results are in parallel with current results that highlight the decreased willingness among dental and medical participants to pursue OM as a future specialty (respectively, 59.31% and 73.33%). According to the Arab Board of Health Specialization (ABHS), OM was not listed as a specialty. The lack of specialty recognition by the ABHS, which is universally recognized by the Arab world, might be one reason for the lack of awareness of these specialties throughout the Arab Middle East and might, therefore, explain the lack of interest in OM among senior healthcare practitioners [15]. Unfortunately, there is a significant gap in the Arab healthcare systems in the number of OM specialists and overall awareness of these specialties. Hence, further efforts should be directed to increasing healthcare professionals' and decision-makers awareness of the importance of OM as a specialty and identifying its crucial rule in the healthcare system and provided services [16].

Furthermore, the implementation of advances in healthcare services and access to care facilities has revealed that the healthcare system can increase the efficiency and accessibility of patient services, especially those in remote areas and/or among patients with impaired access to care by employing new technologies, such as telemedicine and teledentistry, which facilitate the delivery of clinical services even in remote areas [17]. This holds the potential to improve access to and delivery of oral healthcare in rural and underserved areas and also has the potential to save resources and reduce the overall costs of healthcare [18].

Thus, telemedicine may be able to fill this gap while also improving the quality of treatment during specific circumstances, such as during the COVID-19 global pandemic. It is evident that during the pandemic, telemedicine has been utilized in various specialties in dentistry because it provides an alternative approach for remote screening, diagnosis, consultation, treatment planning, and mentoring [19]. However, further research should explore the future impacts on OM practice with the aim of identifying potential challenges and barriers hindering the implementation of telemedicine in the future practice of the OM specialty [20].

Our results show that respondents reported the most difficult cases to diagnose were oral manifestations of hematologic malignancies, followed by oral premalignant conditions, such as leukoplakia. Indeed, an important issue is the attitude toward the increased number of oral cancer cases worldwide and the need to perform a biopsy, given that a cancer diagnosis is based on this procedure. Because of its high rates of comorbidity and mortality, the disease represents a serious public health issue [21]. Previous reports have shown that medical practitioners have a low level of awareness toward oral health in general and that they lack sufficient training in basic clinical oral examination. With regard to oral cancer, in particular, several aspects of the knowledge and practices of medical practitioners were found to be deficient, and recommendations for additional focused education and training were previously described [22].

Several reports have studied the risk factors associated with oral cancer, such as tobacco and alcohol consumption, HPV infection, betel nut chewing, radiation exposure, and immunodepression (HIV). The literature reflects similar results as the present study, highlighting

the lack of awareness and knowledge regarding the risk factors linked to oral cancer [23-25]. Such figures are alarming. Moreover, several studies have assessed the frequency with which dentists claim to adopt preventive measures for oral cancer in routine practice [26,27].

In general, those studies have shown that some measures are performed by a small proportion of dentists, and early detection is known to positively impact the prognosis by increasing survival rates. However, dentists may experience difficulty in detecting, diagnosing, and treating oral lesions. Most dentists attribute diagnostic difficulty to limited theory instruction and/or practical training in the subject of OM [28,29].

In this sense, Frola and Barrios evaluated the knowledge and attitudes about oral cancer among dental students after the students had contact with OM, which expanded during graduate studies. Although the students showed good attitudes about oral cancer, it was possible to identify difficulty around risk factors and prevention. Other studies assessed dentists' awareness and knowledge of oral lesions and oral cancer, but similar to the present study, these studies did not assess dentists' perception of OM education during graduate years and their ability to perform a biopsy [30,31].

However, the most difficult cases to manage were oral lichen planus/lichenoid reactions, oral manifestations of hematologic malignancies, oral manifestations of vesiculobullous diseases, and oral premalignant conditions. This is in accord with previous results finding that healthcare practitioners tend to refer patients with the aforementioned conditions rather than provide therapeutic intervention [9].

Another important aspect is related to the pre-operative screening and preventive dental clearance for patients undergoing chemotherapy, radiotherapy, and/or administration of bisphosphonate agents. When the participants were asked if patients who are to undergo chemotherapy/radiotherapy should be referred for dental clearance, 60.44% answered yes; however, 15.26% answered no, and 24.30% were not sure. When the participants were asked if patients who are to undergo bisphosphonate treatment should be referred for dental clearance, 48.29% answered yes, 16.82% answered no, and 34.89% were not sure.

In view of the forgoing, the current results raise concerns about managing many OM cases and related conditions by non-OM professionals. The recent increased recognition and accreditation of the OM specialty among different healthcare commissions and organizations combined with the associated high demand for those services should aid to increase the emphasis on OM education. Demand for OM as a discipline treating a wide range of diseases and complex disorders is expected to increase; hence, there is an urgent need for further enhancement of its incorporation into other healthcare education and practices.

Conclusion

The present study sought to assess the attitudes toward the OM specialty among healthcare providers in Saudi Arabia. Based on the present results, we conclude that healthcare providers should be more aware of the OM discipline, and hence, there is a need to implement curricula in the field of OM for dentistry and medical students and to support continuing education among healthcare providers to reduce diagnostic delay for oral diseases. Indeed, it is warranted to ensure that all diagnostic and preventive measures for oral diseases can be correctly employed and routinely conducted in patient populations. Continuing education and strategies involving practical training in OM may potentially maintain and further improve the oral healthcare experience of patients and thereby hopefully reduce the associated comorbidity of perceived oral health problems.

Conflicts of Interest

The authors declare no conflicts of interest with regard to this study.

Bibliography

1. Askitopoulou H., *et al*. "The origins of oral medicine in the Hippocratic collected works". *Journal of Oral Pathology and Medicine* 46 (2017): 689-694.

2. Ahluwalia A., *et al*. "Current training provision and training needs in oral health for UK general practice trainees: survey of General Practitioner Training Programme directors". *BMC Medical Education* 16 (2016): 142.

3. Scully C., *et al*. "Oral medicine (stomatology) across the globe: birth, growth, and future". *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 121 (2016): 149-157.

4. Sollecito TP., *et al*. "Oral medicine: defining an emerging specialty in the United States". *Journal of Dental Education* 77 (2013): 392-394.

5. Miller CS and Peterson DE. "Oral medicine: today's future can become tomorrow's reality". *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 126 (2018): 409-414.

6. Bez C., *et al*. "Oral medicine in Europe: past, present and future". *British Dental Journal* 223 (2017): 726-728.

7. Mignogna M and Fedele S. "The neglected global burden of chronic oral diseases". *Journal of Dental Research* 85 (2006): 390-391.

8. Miller CS., *et al*. "Changing oral care needs in the United States: the continuing need for oral medicine". *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics* 91 (2001): 34-44.

9. Almazrooa SA and Binmadi NO. "The knowledge and attitude of physicians' toward the oral medicine specialty". *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology* 33 (2021): 83-88.

10. Stoopler ET., *et al*. "An international survey of oral medicine practice: proceedings from the 5th World Workshop in Oral Medicine". *Oral Diseases* 17 (2011): 99-104.

11. Khoury ZH and Sultan AS. "The state of oral medicine and oral pathology in the Arab Middle East". *The Saudi Dental Journal* 33 (2021): 113-115.

12. Baum BJ and Scully C. "Training specialists in oral medicine". *Oral Diseases* 21 (2015): 681-684.

13. Pinto A., *et al*. "The practice of oral medicine in the United States in the twenty-first century: an update". *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 119 (2015): 408-415.

14. Alrashdan MS., *et al*. "Career perspectives of senior dental students from different backgrounds at a single Middle Eastern institution". *BMC Medical Education* 18 (2018): 283.

15. Binmadi NO and Almazrooa SA. "The use of oral and maxillofacial pathology services by general pathologists and their attitude towards it in Saudi Arabia". *Saudi Medical Journal* 38 (2017): 857-862.

16. Alrashdan MS., *et al*. "Awareness of oral medicine among medical practitioners, evidence of the unbridged interdisciplinary gap". *Journal of Evaluation in Clinical Practice* 25 (2019): 142-147.

17. World Health Organization. Global diffusion of eHealth: making universal health coverage achievable: report of the third global survey on eHealth. World Health Organization (2017).

18. Betancourt JA., *et al*. "The impact of COVID-19 on telemedicine utilization across multiple service lines in the United States". *Healthcare* 8 (2020): 380.

19. Ghai S. "Teledentistry during COVID-19 pandemic". *Diabetes and Metabolic Syndrome: Clinical Research and Reviews* 14 (2020): 933-935.

20. Al Mohaya MA., *et al*. "Telemedicine among oral medicine practitioners during COVID-19 pandemic and its future impact on the specialty". *Risk Management and Healthcare Policy* 14 (2021): 4369-4378.

21. Van Der Waal I. "Are we able to reduce the mortality and morbidity of oral cancer: some considerations". *Medicina Oral, Patología Oral y Cirugía Bucal* 18 (2013): e33-e37.

22. Carter LM and Ogden GR. "Oral cancer awareness of general medical and general dental practitioners". *British Dental Journal* 203 (2007): E10.

23. Shimpi N., *et al*. "Knowledgeability, attitude and behavior of primary care providers towards oral cancer: a pilot study". *Journal of Cancer Education* 33 (2018): 359-364.

24. Seoane Lestón JM., *et al*. "Knowledge of oral cancer and preventive attitudes of Spanish dentists. Primary effects of a pilot educational intervention". *Medicina Oral, Patología Oral y Cirugía Bucal* 15 (2010): e422-e426.

25. Razavi SM., *et al*. "Dentists' knowledge, attitude, and practice regarding oral cancer in Iran". *Journal of Cancer Education* 28 (2013): 335-341.

26. Alqutaibi AY., *et al*. "Early detection of oral cancer and potentially malignant disorders: experiences, practices, and beliefs of prosthodontists practicing in Saudi Arabia". *The Journal of Prosthetic Dentistry* 126 (2021): 569-574.

27. Sankaranarayanan R., *et al*. "Oral cancer: prevention, early detection, and treatment". Cancer: Disease Control Priorities (3rd edition), Gelband H, *et al*. (editors), The International Bank for Reconstruction and Development/The World Bank (2015).

28. López Jornet P., *et al*. "Attitude towards oral biopsy among general dentists in Murcia". *Medicina Oral, Patología Oral y Cirugía Bucal* 12 (2007): 116-121.

29. Hassona Y., *et al*. "Factors influencing early detection of oral cancer by primary health-care professionals". *Journal of Cancer Education* 31 (2016): 285-291.

30. Frola MI and Barrios R. "Knowledge and attitudes about oral cancer among dental students after Bologna Plan implementation". *Journal of Cancer Education* 32 (2017):634-639.

31. Leonel AC., *et al*. "Knowledge and attitudes of primary health care dentists regarding oral cancer in Brazil". *Acta Stomatologica Croatica* 53 (2019): 55-63.

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