

Pattern of patient referrals to the Oral Medicine Clinic at the University of West Indies (UWI) dental school Trinidad -Pilot Study

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ABSTRACT

Objective

Oral medicine specialists provide care to patients with oral and systemic conditions. Descriptive and retrospective studies have been conducted internationally to understand the referral patterns for oral health conditions, but have not been conducted in Trinidad and Tobago. The purpose of this study was to identify patients' demographics and lesion types, referral sources to the University of the West Indies (UWI) Dental School, Department of Oral Medicine (UWI OM Department) and Oral Pathology and to determine the mean time (in working days) from patient referral to consultation.

Methods

Dental students and residents assigned to the OM rotation, completed a questionnaire for all patients referred to the UWI OM department for consultation and treatment, during one year from 2017-2018. All patients were examined using a standard oral assessment protocol by residents of the department. Diagnosis was made based on histological or clinical assessment.

Results

There were 106 referrals. Patients' mean age was 47.1yrs, 60.4% were females, 50% were Indo-Caribbean. Most referrals (45.3%) were from private general dentists, followed by dental referrals from a health centre (19.8%). The most common diagnoses included: Mucocele (10.4%), Lichen Planus (8.5%) and Erosive Lichen Planus (7.5%). Oral lesions were most common in sites labelled as "other".

Conclusion

The findings suggest that referrals by general dental practitioners were higher in proportion compared to medical practitioners. There were more female participants and most referrals were for oral white lesions. There was just over a two week, mean-time, in working days between the initial referral and date of consultation.

INTRODUCTION

Trinidad and Tobago is a twin island state comprising a population of 1.33 million.¹ A large percentage of dentists in Trinidad and Tobago have graduated from dental schools in the Caribbean and are practicing in urban areas of Trinidad.² Oral Medicine (OM) and diagnosis are important disciplines since there is enough evidence that suggests a relationship between oral diseases and systemic diseases, such as, the systemic conditions presenting with oral manifestations and also influencing the oral health care.^{3,4} Oral Medicine specialists provide clinical care to patients with a wide variety of orofacial conditions, including oral manifestations of systemic diseases.⁵ Additionally, OM specialists treat salivary gland diseases, oral complications in oncology patients, non-dental orofacial pain including chemosensory and neurologic impairments. Several descriptive and retrospective studies have been carried out internationally on the referral patterns of patients to Oral Medicine clinic, which examined patient demographics and found that several factors affect the delivery of this specialty.⁶⁻⁸ However, to the best of our knowledge this the first study to examine the pattern of patient referral to Oral Medicine specialists in the Caribbean.

The OM services are available solely through the UWI OM Department. This clinic receives patients with a myriad of dental conditions referred by other departments within the school, public health system and private sector requiring specialist consultation. Additionally, patients may also directly access specialist care through the walk-in clinic or even via the interdepartmental clinics on the first day of presentation.

The recent increase in the demand for greater access to OM services, highlights the benefit of studies that examine patient demographics, lesion types and referral sources.⁹ Considering the above reasons and the fact that most dentists in Trinidad serve in private practice, a study was conducted to understand the pattern of patient referrals to the UWI OM department in Trinidad.

The aims of this study were first to determine the lesion types and referral sources to the UWI OM Department and secondly, to examine the patient demographics and determine the mean time (in working days) taken from patient referral to consultation.

METHODS

A descriptive study was conducted among patients referred to the UWI OM Department between June 2017-May 2018. The participants included all referred patients attending the UWI OM department during the study period. A standardized oral assessment protocol was developed, incorporating guidelines suggested by the National Health and Nutrition Examination Survey III.¹⁰ The questionnaire was initially pilot tested and later completed by 4th/5th year dental students and residents assigned to the oral medicine clinic rotation for 3 months, for all first-time patients who were referred for consultation. The students and residents were trained by RB & HAB in a seminar-based setting, regarding the oral examination and diagnosis protocol for two days. This was later followed by clinical practice where the students and residents examined patients using sterilized/disposable instruments, under standard infection control guidelines, in the UWI OM department and collected the data. These were patients who presented for follow up visits in the oral medicine clinic, some were medically compromised with chronic diseases such as Hypertension and Diabetes. All patients who presented to the UWI OM department during the one-year period of data collection were included; however, those referred for tooth extractions at the emergency clinic and those being reviewed for elective treatment were excluded.

Demographics, source of referral (including both practicing dentists and medical doctors, primary care physicians [PCPs] from the hospital as well as private practice) and the reason for referral were recorded. Additionally, data were collected on the site and the date and time at which referred patients were initially seen were recorded as well as *'any review appointments'*. All patients were then examined by one of two consultants, (HAB and RS), both of whom were trained and calibrated by a gold standard examiner and co-author (RB), the consultants then provided a clinical diagnosis. The inter-examiner agreement was 0.8 while other diagnoses were based on the histopathological assessment before the final diagnosis was determined. The case diagnosis involved both histopathological and clinical diagnoses since certain diagnoses require histopathology such as carcinomas and others are based on clinical assessment such as Lichen Planus. The patients were informed of their findings and any queries relating to their oral health were addressed by the specialists, who also treated them

based on best practice OM guidelines.⁵ If any patients were given dates for review with the consultant, these were then recorded. Data were de-identified, organized and entered using Microsoft Excel (Microsoft Corp., Redwood, WA) which was analyzed using SPSS software package version 22 (IBM, Armonk, NY USA).

RESULTS

There were 106 referrals, the majority (60.4%) were female, the mean age was 47.1 (SD 19.7) years and 50% of participants were of Indo-Caribbean ethnicity. The largest source of referrals (45.3%) was by private general dentists (Figure 1). The most common conditions stated for referral were white lesions (15.1%) and raised soft tissue lesions (14.2%) (Figure 2).

Figure 1: Source of Referral

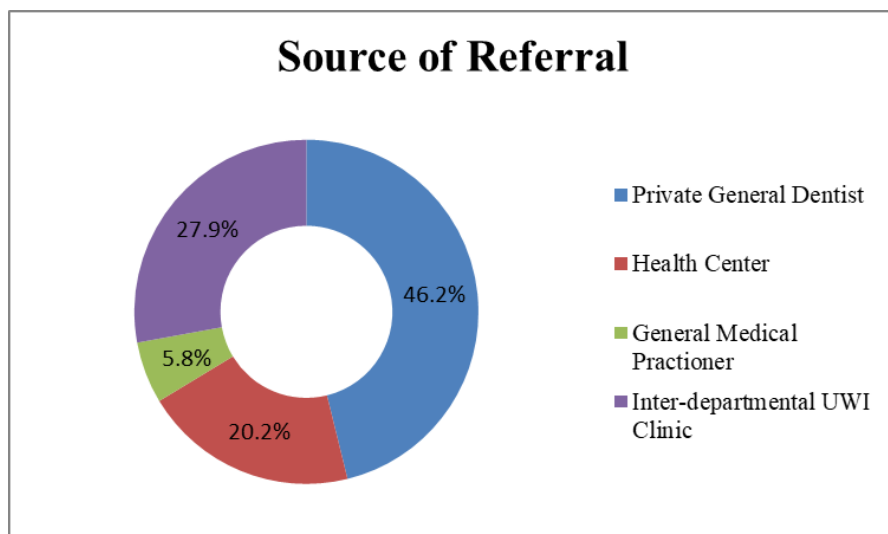
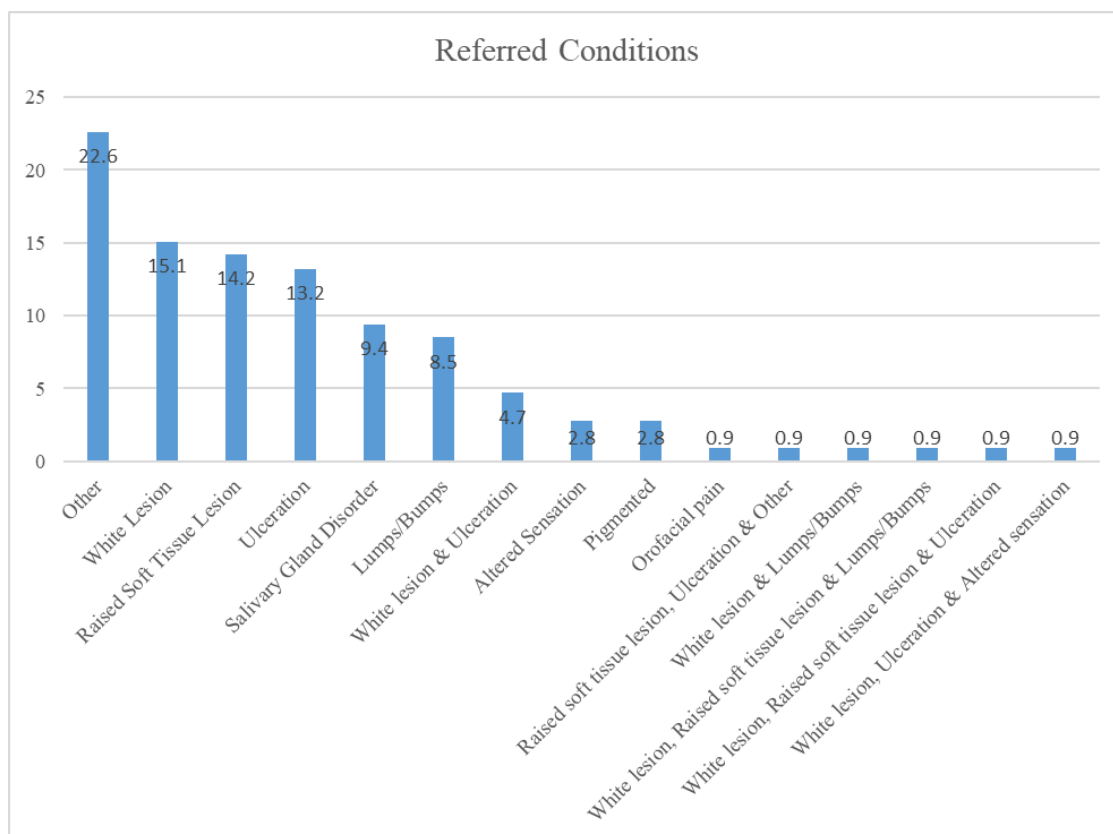


Figure 2: Referred Conditions



The most common final diagnoses included Lichen Planus (8.5%), in addition to 7.5% having Erosive Lichen Planus; followed by Mucocele (10.4%) (Table 1). Analysis of Variance (ANOVA) was performed on the number of days

between the letter of referral and the date of assessment, with a probability (p) value=0.74, which showed no statistical difference between the variables (Table 1).

Table 1: Showing Final Diagnosis (n= 106) and maximum number of days taken to first assessment

Final Diagnosis	%	Maximum number of days	ANOVA F	Sig.
Immune-mediated mucosal lesions				
Oral Lichen Planus	8.5	18		
Erosive Lichen Planus	7.5	22		
Pemphigus Vulgaris	2.8	59		
Aphthous Ulcers	1.9	0		
Papular Lichen Planus	0.9	1		
Reticular Lichen Planus	0.9	1		
Total	22.5			
Orofacial pain disorders				
Facial Palsy	1.9	3		
TMD	0.9	52		
Facial Neuralgia	0.9	0		
Total	3.7			
Benign tumours/ neoplasms/ cysts				
Irritational Fibroma	1.9	14		
Radicular Cyst	1.9	0		
Fibroma	1.9	10		
Ameloblastoma	0.9	0		
Unicystic Ameloblastoma	0.9	8		
Epidermoid Cyst	0.9	0		
Periapical Cyst	0.9	18		
Total	9.3			
Dysplasia and cancerous lesions				
Leukoplakia	4.7	0		
SCC	4.7	33		
Carcinoma right max. sinus	0.9	0		
Total	10.3			
Reactive lesions				
Pyogenic Granuloma	5.7	24		

PA granuloma	2.8	22		
Traumatic ulcer	2.8	2		
Frictional Keratosis	0.9	0		
Smoker's Keratosis	0.9	0		
Traumatic Mucosa due to Exostosis	0.9	0		
Total	14.0			
Salivary gland disorders				
Mucocele	10.4	57		
Ranula	2.8	0		
Xerostomia	2.8	33		
Stone of Stenson duct	0.9	0		
Right Parotid Gland Obstruction	0.9	2		
Total	17.8			
Infections				
Candidiasis	2.8	14		
Cellulitis	2.8	0		
Secondary HSV II	1.9	2		
Verrucous Papilloma	0.9	0		
Verrucous Vulgaris	0.9	0		
Osteomyelitis	0.9	0		
Alveolar osteitis	0.9	1		
Total	11.1			
Other mucosal/ gingival lesions				
Migratory glossitis	2.8	18		
Lingual Tori	1.9	1		
Pigmented lesion	1.9	14		
Fibrous Dysplasia	0.9	11		
Medically compromised at risk of ONJ	0.9	0		
Total	8.4		0.79	0.74

Further analysis was performed with a comparison of the means of the final diagnosis and the gender of the participants which showed females with $19.23 \pm SD 12.4$, p-value 0.77 (Table 2).

From the patients seen, only 43.8 % of patients had a referral letter documented. There were no urgent referrals and almost half of the patients' files (56.2%) either stated that they were in a different UWI clinic or attended the walk-in service of the emergency clinic and

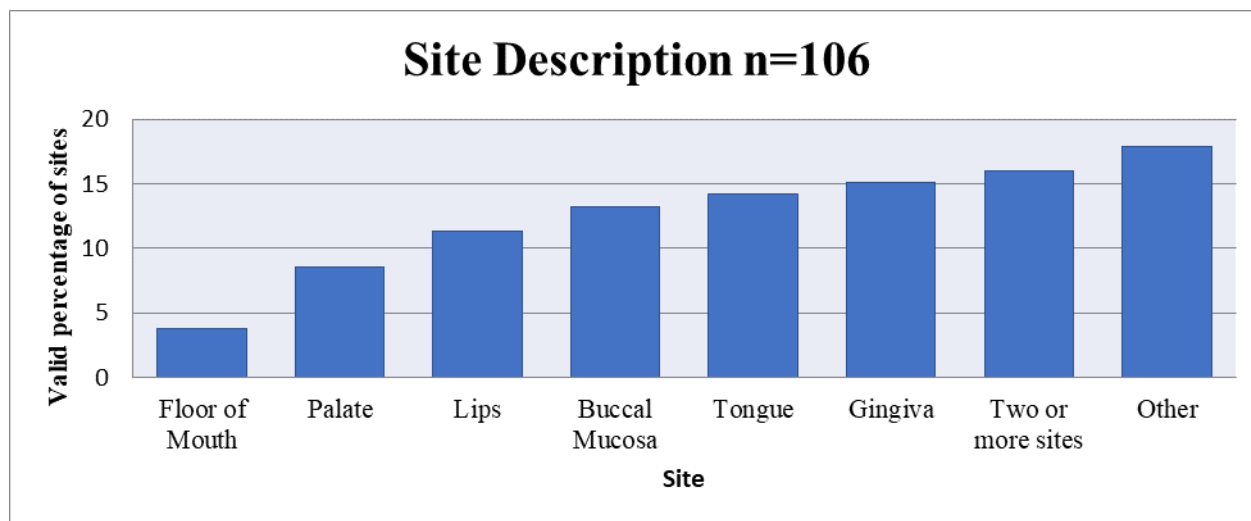
were given an appointment to present to the UWI OM department for consultation. Lesions were most common in sites labelled as 'other' (18.3 %) in the oral cavity (Figure 3).

"Other" included disorders of the temporomandibular joint (TMJ), neurological and sensory disorders and lesions of the sinus.

Table 2: Final diagnosis of patients compared by their gender

Sex	Mean	N	Std. Deviation	Sig
Male	18.54	41	11.97	
Female	19.23	65	12.34	
Total	18.96	106	12.14	0.77

Figure 3: Sites described by participants



The mean time from those that had a referral, to the time in which they were initially seen, was 17.65 network days -working days between the two dates. From the patients' files that were obtained 43.8% of patients were documented to have a follow-up visit after the initial visit, with a mean waiting time of 18.5 network days. Nearly 22 % of patients had a second follow-up visit documented in their respective files, with a mean time of 42.9 network days.

DISCUSSION

The UWI OM Department is located in one of the three major hospitals in the country and is easily accessed by most patients traveling from nearby towns. The travel time to the clinic for almost all our patients in the present study was within two hours and the distance was within a 50 kilometers radius. Most dentists in various counties in Trinidad refer patients to the UWI Dental School for emergency care. The registered dentists who practice in the Eastern region of Trinidad and on the island of Tobago, were less compared to other areas of Trinidad¹¹ and there were no referrals from these places. A small percentage (5.7%) of patients were referred by general

medical practitioners (GMP) when compared to General Dental Practitioners (GDP) as was similar to a study done in Canada.^{7, 12}

The reasons for the small percentage of referrals by medical doctors and primary health physicians (PHPs) needs to be evaluated as medical doctors form a critical group in the referral of patients since a poor/slow referral by them can potentially increase the time taken by patients to avail OM services in cases of suspicious lesions. The findings are similar to those reported by Friesen et al (2019).¹² However, the higher referrals from GDPs may be due to their specific dental knowledge and training in the referral of suspicious oro-mucosal lesions. The main reason, in this study for referral, was soft tissue abnormalities and oral white lesions. Lichen planus and mucocele accounted for the majority of lesions diagnosed. Lichen planus can be difficult to diagnose sometimes and this could be another reason for a referral without a provisional diagnosis and is consistent with other studies^{6,13}. The proportions of final diagnosis seen in the UWI OM department may provide us with information on the cases more commonly seen by OM specialists. Additionally, this information can give us an

insight into the conditions that give the GDPs or the GMPs difficulty in diagnosis, so that proper training can be provided, both at the level of undergraduate teaching and postgraduate training through CPD; to increase the accuracy of referrals. Also, the information gleaned may help us in informing the graduate curriculum, and to improve dental and medical education in Trinidad.

The mean waiting time, from the time of referral to their initial visit was 17.65 network days which perhaps could be shorter but there is no standard time for referrals for oral medicine. However, a recent study by Friesen et al. (2019), had an initial mean waiting time of nearly 106 days between the referral and the first appointment. This could be due to the fact that during clinical rotations a fixed number of students and residents are posted at the UWI OM department. Furthermore, the OM specialists and special care dentist at UWI Dental School are academics who have clinical rotations in the oral medicine unit and this results in sessional supervision by these specialists rather than daily supervision. However, it is noteworthy, that when the final diagnosis was compared among the various pathologies, the number of days between the referral to the first assessment, no statistical difference was found.

Suggestions

- ◆—Increasing awareness regarding common dental conditions during the undergraduate medical programme.
- ◆—Developing hospital policies to reduce the waiting time for patients who attend the oral medicine clinic
- ◆—Provision of continuous professional development programmes to health providers to increase the referral.

Limitations

The number of years of dental practising experience since graduation, was not ascertained in the current study. Although this is the only specialised OM clinic in the country, the results should be cautiously extrapolated as this was a pilot study with a small sample conducted at a single centre (UWI OM Clinic) in a single centre design. Additionally, the UWI Dental School may have been essentially a tertiary point of referral and patients who may have initially seen their physician, and then referred to their dentist, were not taken into consideration as a

separate referral.

CONCLUSION

This study showed that the majority of referrals were from general dentists. The common conditions that were referred were oral white lesions and raised soft tissue lesions. Also, there is a need to reduce the wait time from the referral to the point that they are initially seen/ examined at UWI.

Ethical approval statement: This was obtained from the hospital administration. An ethics waiver of consent was also obtained from the UWI ethics committee as the research did not involve any invasive procedures and was carried out in accordance with the Helsinki declaration on ethical principles.

Conflict of Interest statement: None

Funding: No funding was received for the study.

Authors' contribution: Dr. Ramaa Balkaran developed the research design, contributed to the intellectual content, interpreted the data findings and drafted the manuscript and helped in the critical revision of the manuscript. Dr. Haytham Al-Bayaty developed the research design, contributed to the intellectual content, examined all the patients, helped in the drafting and critical revision of the manuscript. Dr. Rochard Santo contributed to the intellectual content, examined all the patients, helped in the drafting and critical revision of the manuscript. Dr. Laura-lee Lynch collected, entered and analysed data related to the study and helped in the critical revision of the manuscript. Dr. Daryll Harrynarine collected and entered the data and helped in the drafting and critical revision of the manuscript. Dr. Meghashyam Bhat interpreted the data findings and helped in the critical revision of the manuscript. All authors reviewed and approved the final draft of the manuscript and agreed to be accountable for all aspects of the work

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