Original Article

Periodontal Referral Pattern in Periodontal Specialist Clinic in Faculty of Dentistry, Universiti Teknologi MARA (UiTM): a retrospective pilot study

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Abstract

Objectives: Periodontitis is a chronic disease which remain undiagnosed and untreated without proper examination and referral to specialist clinic for further management Therefore, this study was conducted to evaluate the pattern of referrals to Universiti Teknologi MARA (UiTM) Periodontal Specialist Clinic.

Materials and methods: A total of 176 periodontal cases referred to UiTM Periodontal Specialist Clinic in year 2011 and 2016 were identified and patient's referral forms were collected. The data obtained were the referred cases from undergraduate student clinics, other specialist clinics, UiTM primary dental care clinic and private dental clinics. Descriptive data analysis was conducted using frequency distribution by SPSS. Chi square analysis was used to evaluate the association of source of referral, diagnosis and reason for referrals to Periodontal Specialist Clinic.

Results: There was increased referral cases to Periodontal Specialist Clinic in 2016 (86.9%) compared to 2011 (13.1%). Most referral to Periodontal Specialist Clinic were received from faculty's undergraduate student clinic in both 2011 and 2016 (46%), followed by other specialists (27.3%), primary care clinic (25.6%) and private practice (1.1%). 96% of cases were referred for intervention by periodontist as more than half of the cases were referred for the non-surgical periodontal treatment. Chi square analysis showed the association between source of referral and reason for referral was statistically significant (p value=0.000).

Conclusion: Proper periodontal screening in all patients and necessary referral to specialist clinic is crucial to prevent undiagnosed periodontal disease.

Keywords: periodontitis; referral; specialist

Introduction

Periodontal disease is an inflammatory disease affecting the soft and hard supporting tissue of a tooth. Based on National Oral Health Survey of Adults 2010 conducted by Oral Health Division, Ministry of Health Malaysia, there was a higher prevalence of periodontal disease among adults Malaysian which were 94% (Mohd-dom et al. 2013). American Association of Periodontology stated that there are two stages of plaque-induced periodontal disease, started with mild plaque-induced gingivitis which is the

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inflammation of affected gingiva due to host immune response following microbial attack (Slots, 2013)

The salient signs of gingivitis are erythema and oedema of gingival tissue. Prolonged microbial challenge causes chronic inflammation of gingival tissue, and in certain cases it leads to periodontitis. Periodontitis is defined when there is apical migration of epithelial cells to root surface, loss of connective tissue attachment and irreversible loss of bone. As a result, the involved tooth has less support and become mobile. Furthermore, if left untreated, periodontitis may lead to tooth loss and edentulism (Ramseier et al., 2017, Noor, 2015).

Chronic periodontitis is slow-progressing disease without site-specificity that can affect individuals regardless age and gender. Unlike chronic periodontitis, aggressive periodontitis is more common in young aged-patients and the rapid erratic attachment loss does not correspond to the minute amount of plaque and calculus found intraorally (Albandar, 2014). Treatment of both chronic and aggressive periodontitis aim to halt the disease from progression or recidivism. Since periodontal disease is caused by the imbalance equilibrium of bacterial assault and host immune response, periodontal therapy reduces bacterial load in subgingival area to allow gingival tissue to resume health (Wade, 2013). However, there are systemic and local risk factors that can aggravate the disease such as smoking habit and underlying systemic illness making managing periodontal disease challenging (Aljehani 2014). Besides that, recent evidence also illustrated the role of periodontal disease as a risk factor for systemic diseases including cardiovascular disease, diabetes mellitus, chronic obstructive pulmonary disease, preterm birth and cancers (Pizzo et al. 2010).

Due to late manifestation of the conspicuous symptoms of periodontitis, most patients are unaware of their ongoing periodontal problem. Patient usually comes to dental clinic with undiagnosed periodontal disease (Lee et al. 2009). Therefore, general dental practitioner (GDP) is responsible to detect the disease at its early stage by screening the patient at each recall visit. GDP should be competent in performing basic periodontal examination (BPE) and manage the patient duly. Referral to periodontal specialist is necessary, yet the GDP must first evaluate and examine the need for referral based on the severity and extent of the diseases (The Good Practitioners Guide to Periodontology 2016).

Currently, there is limited body of literature on referrals of patients to periodontal specialists. The trend varied across different regions in the world. Jones et al reported that in India, the absence of periodontal referral to specialist was mainly due to lack of awareness of periodontal disease and the need for periodontal therapy such as root debridement. Other factors that contribute to periodontal referral are dependent on the practice, referrer, patient and specialists (Kraatz et al. 2017). The referral process must address the relevant factors to ensure good quality referral and assist both general dental practitioners and periodontist to manage periodontal disease (Dani et al., 2012). Therefore, this research served a pilot study to evaluate the pattern of referrals to UiTM Periodontal Specialist Clinic and functioned as preliminary to developing a periodontal referral protocol in UiTM Dental Specialist Centre.

Material and Methods

A retrospective analysis was conducted on 176 patient referral forms. All periodontal cases referred to UiTM Periodontal Specialist Clinic in year 2011 and 2016 were identified and patient's referral forms were collected. The data obtained were the referred cases from undergraduate student clinics, other discipline specialist clinics, UiTM primary dental care clinic and private dental clinics.

The following information was gathered from the records: patient's gender, source of referral, reason for referral and periodontal treatment plan. Descriptive data analysis was conducted using frequency distribution by SPSS. Chi square analysis was used to evaluate the association of source of referral, diagnosis and reason for referrals to Periodontal Specialist Clinic. P value<0.05 was defined as statistically significant.

Results and statistical analyses

A total of 176 referral cases were received by Periodontal Specialist Clinic UiTM in the year 2011 and 2016. Table 1 reports the number of case referred, by year and gender, for the entire sample. There were 23 cases (60.9% male, and 39.1% female) referred in year 2011 which accounted for 13.1% of total case referred. The number of cases referred increased almost sevenfold in 2016 (Table 1) (Figure 1). 153 cases were referred in 2016 that summed to 86.9% of total case referred. Unlike in

Year	No of male patient (%)	No of female patient (%)	Total number of patient (%)
2011	14 (60.9)	9 (39.1)	23 (13.1)
2016	76 (49.7)	77 (50.3)	153 (86.9)

Table 1: Number of patients referred in 2011 and 2016 according to gender

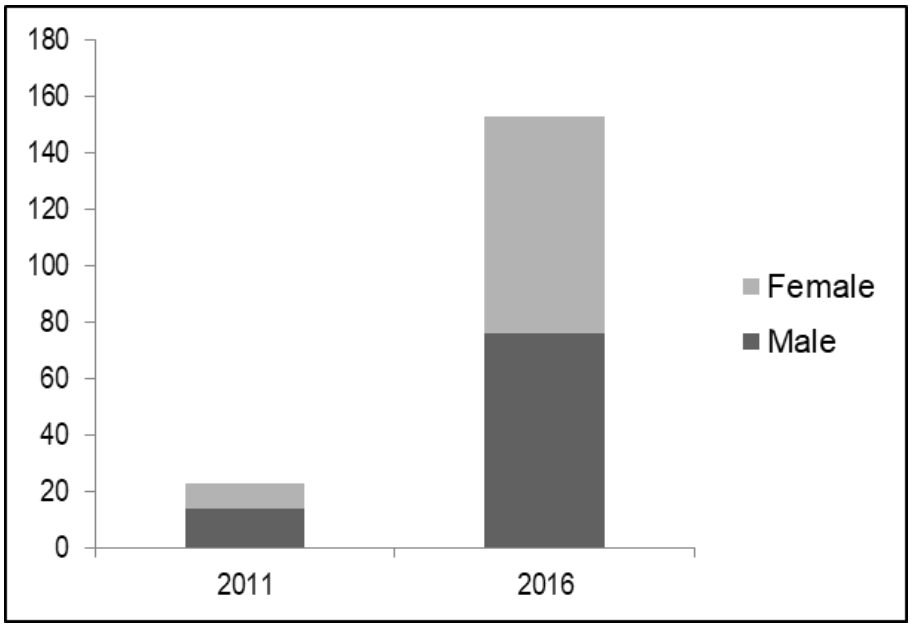

Figure 1: Number of patients referred in 2011 and 2016 according to gender

2011 when there were more male patients referred to Periodontal Specialist Clinic, the number of male and female patients referred in 2016 was similar.

In both year 2011 and 2016, most referral to Periodontal Specialist Clinic were received from faculty's undergraduate student clinic. 81 cases came from students' clinic which accounted for 46% of case referred. 48 cases were referred by specialists from other departments and a quarter of the cases referred came from primary care clinic which situated in the same premise. Only 2 cases or 1% of total cases referred came from private clinic outside UiTM (Table 2)(Figure 2).

The patients were screened comprehensively by referring personnel prior to referral and the diagnosis given was provisional. Highest proportion of cases was referred due to generalized chronic periodontitis which accounted for 66.5% of total cases referred. Other periodontal-disease related referrals were localised chronic periodontitis and gum swelling which accounted for 15.3% and 6.3% of total cases referred, respectively. However, none of the cases found to be gingival swelling due to medication and also related to systemic disease. Besides,

Source of referral	No of patient (%)
Undergraduate student clinic	81 (46.0)
Other discipline specialist clinic	48 (27.3)
Primary care clinic	45 (25.6)
Private clinic	2 (1.1)

Table 2: Number of patients referred according to source of referral

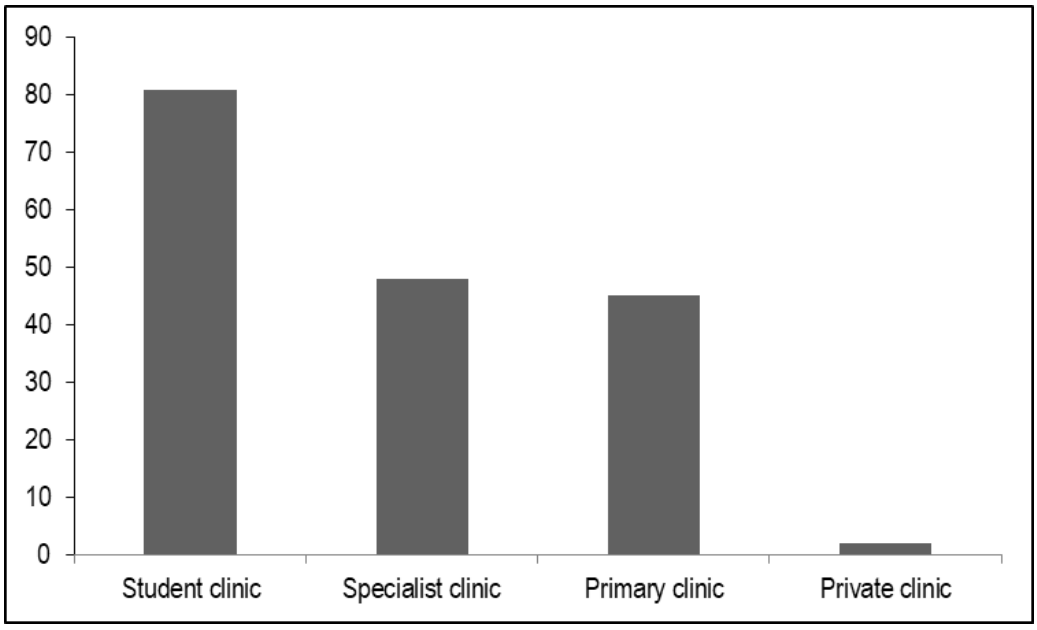

Figure 2: Cumulative data of patients referred in year 2011 and 2016 according to source of referral

periodontal disease, 21 cases were referred due to tooth sensitivity (Table 3) (Figure 3).

In the referral pro forma, referring personnel could opt to seek referral for consultation or for periodontal-related treatment. Only 7 cases were referred for periodontal specialist consultation while 96% of cases were referred for intervention by periodontist. More than half of the cases were referred for the non-surgical periodontal treatment. Moreover, guided tissue regeneration performed on 6.8% of the total cases referred. Multidisciplinary cases such as implant and pre-prosthetic crown lengthening accounted for 11.9% and 7.4% of total cases referred, respectively (Table 4) (Figure 4).

Chi square analysis showed the association between source of referral and reason for referral was statistically significant (p value=0.000). Significantly high proportion of case referred for non-surgical periodontal therapy such as scaling and root debridement came from student clinic. The reason for referral was significantly related to the provisional diagnosis made by referring dental practitioner (p-value=0.000).

Diagnosis	No of patient (%)
Generalized chronic periodontitis	117 (66.5)
Localised chronic periodontitis	27 (15.3)
Hypersensitivity	21 (11.9)
Gum swelling	11 (6.3)

Table 3: Number of patient referred according to diagnosis

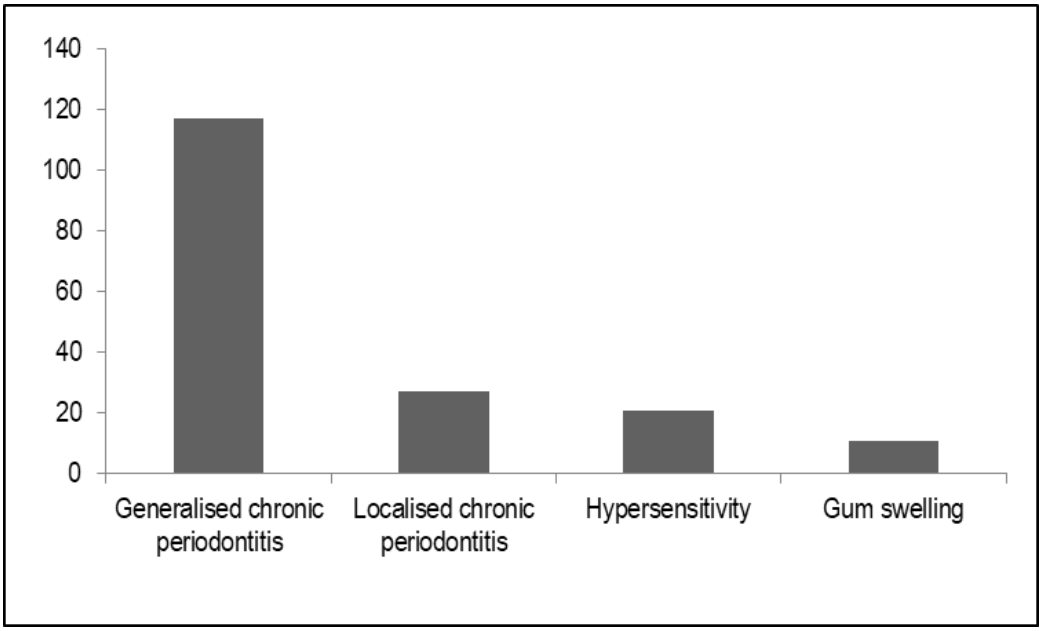

Figure 3: Cumulative data of patients referred in year 2011 and 2016 according to diagnosis

Treatment	No of referrals (%)
Consultation	7 (4.0)
Scaling and root debridement	100 (56.8)
Guided tissue regeneration	13 (6.8)
Implant	12 (11.9)
Desensitising gel application	21 (13.1)
Crown lengthening	23 (7.4)

Table 4: Number of patients referred according to reason of referral

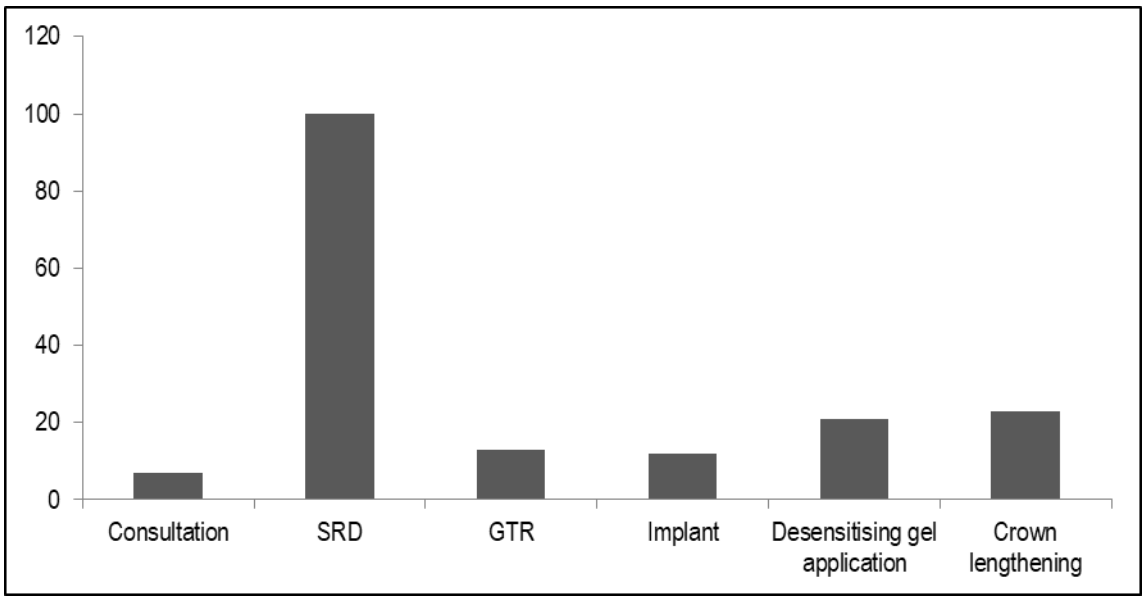

Figure 4: Cumulative data of patients referred in year 2011 and 2016 according to reason of referral

Discussions

Year 2011 and 2016 were the chosen years due to profound events in Periodontal Department, UiTM. Referral pro forma was first implemented in the year 2011 and the database of cases referred to periodontist in UiTM simultaneously started to establish. In addition, in year 2016, stand -alone Periodontal Specialist Clinic began its operation. As a result, there is a remarkable increase in number of cases referred in 2016 when compared to 2011. Enrolment of postgraduate students in Periodontology Department in 2016 provided more manpower to manage complex periodontal cases.

Cumulatively over both year 2011 and 2016, most cases were referred from student's clinic and significantly for non-surgical periodontal therapy. Students may have sound knowledge to be able to recognize red flags of periodontal disease, however, lack of skill to apply theoretical knowledge into clinical settings deterred students from referring case appropriately (Lee et al. 2009). Besides that, students recognized their low competence hence required periodontists' clinical skills to manage complex periodontal disease (Park et al. 2011).

On the other hand, other dental practitioners may have perceived

self-competence to manage periodontal cases even though the diagnosis warranted a referral to periodontist (Lee et al. 2009) resulting in smaller portion of referrals received from other specialist and primary care clinics for non-surgical periodontal therapy. Nevertheless, a multidisciplinary approach in dentistry is the pivotal way to sustain or regain oral health. In addition to treating periodontal disease prior to oral rehabilitation or prosthesis placement, there were pre-prosthetic periodontal procedures required by specialists from different disciplines (Bhati 2016). Examples of pre-prosthetic referral to Periodontal Specialist Clinic that were received in year 2011 and 2016 were crown lengthening and implant placement.

Only two cases referred were received from different dental facility. Dental practitioners outside of UiTM dental facility may not be aware of the availability of periodontal specialist care service. Location and fees were also the possible factors that contribute to low number of patients referred from private dentist (Kraatz et al. 2017). Some patients preferred for general dental practitioners to carry out periodontal therapy because it cost less when compared to specialist. Another barrier for referral may include the preference of private dentist to keep patients rather than refer for financial reason (Bhati 2016).

No referral was made by other healthcare professionals such as medical practitioners regarding periodontal problems. Despite the emerging evidence showing the relationship of periodontal disease and systemic illness (Pizzo et al. 2010), medical practitioners were not aware of the two-way association between periodontal disease and systemic illness such as diabetes mellitus and cardiovascular disease. It was suggested by a study done by Abid and Javed, the medical practitioner had fair amount of knowledge on the importance of periodontal screening in medical clinic (Abid & Javed, 2018).

The question ‘when to refer’ is a very relative and individualistic for which the referral process is still problematic despite the availability of guidelines (Mcguire and Scheyer 2000). Referral to secondary care depends solely on judgement of general dental practitioners regarding the disease severity and complexity of plan (Dockter et al. 2006). We obtained high number of referrals of generalised chronic periodontitis and localised chronic periodontitis, yet the database was lacking of information concerning disease severity such as mild, moderate or severe. Most general dental practitioners would usually provide the ‘gold standard’ periodontal treatment such as non-surgical scaling and root debridement. They only choose to refer for specialist care when the initiated therapy failed or not effective. In all, clinician skill is a factor that contributes to referral to periodontist (Kraatz et al. 2017).

Conclusion

A referral process is still problematic despite the available guidelines. General dental practitioners should practice proper periodontal screening in all patients and have a recall protocol to prevent undiagnosed periodontal disease. Both periodontist and general practitioners should educate each other regarding the periodontal referral process so a timely and appropriate referral can be made. It is imperative for all dental practitioners or specialists to be aware of the significance of periodontist in a multidisciplinary dental treatment. In all, there is a need for systematic referral protocol along with improvement in communication and

education between general dental practitioners and periodontists to manage periodontal disease comprehensively.

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Conflict of interest

The authors claimed no conflict of interest.

Funding

No financial funding was received for this study.