



Research Article

DOCUMENTATION AND IMPACT IN FORENSIC DENTISTRY AMONG SALEM DENTIST

Indra priyadharshini K¹, Ambika Murugesan¹, Rajkumar Gunaseelaraj², B.Sekar¹, V.Mohanbabu³ and Ilavenil karunakaran⁴

¹Department of Oral and Maxillofacial pathology, Vinayaka Missions Sankarachariyar Dental College, Vinayaka Missions Research Foundation, Salem

²Department of Prosthodontics and Crown & Bridge, Vinayaka Missions Sankarachariyar Dental College, Vinayaka Missions Research Foundation, Salem

³Department of conservative dentistry, Penang International Dental College, Salem

⁴Department of Anatomy, Sri Ramakrishna Dental College and Hospital, Coimbatore

ARTICLE INFO

Article History:

Received 4th January, 2019

Received in revised form 25th

February, 2019

Accepted 18th March, 2019

Published online 28th April, 2019

Key words:

Awareness, Salem, Dental practitioners, forensic odontology, dentist, knowledge study

ABSTRACT

Objectives: The aim of the study is to analyze and evaluate knowledge and assess the awareness, importance of documentation and maintenance of dental records. Material and Method : A cross section study was conducted among 200 dental practitioners in Salem district and data was collected by means of a questionnaire.

Results: From the collected data from clinical experience of the dental practitioners were about 79% practitioners 5 years and above, of the remaining 12 % less than 5 years. Only 49% of dental practitioners always maintain dental records, 45 % of dental practitioners they used store data only selected cases and only 5 % of dental practitioners never store or maintained data. Many of dental practitioners mode of storing the records of hard copy 60% and soft copy 32 %. awareness of the forensic investigation shows 79% they were aware of the forensic programme, certificate courses and investigations.

Conclusion: our study revealed adequate knowledge, attitude, practice among Salem district. More awareness is required among the practitioners regarding proper record maintenance. To enrich knowledge about forensic odontology.

Copyright©2019 **Indra priyadharshini K**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Forensic is derived from the Latin word which means “Court of law“. Odontology refers to study of teeth Forensic odontology has been defined as that branch of dentistry, which, in the interest of justice, deals with the proper handling and examination of dental evidence, and with the proper evaluation and preservation of dental findings.^[1, 2] Forensic odontology has become an integral part of forensic medicine over the past 100 years. It may also be sub classified into forensic odonto-toxicology, which deals with cases of poisoning, but this field is yet to gain popularity globally.^[3] Identification plays an important role in civil cases like insurance claims, matrimonial disputes, property disputes, impersonation, and issue of passports and various licenses. Forensic odontology plays an important role in criminal, monetary disputes, marital, social, burial and the identification of prolong periods.^[4, 5,6] Main role of general dentist should also possess basic knowledge about forensic odontology and the role of a dentist in the identification of a person, and the importance of maintaining dental records of all patients.

***Corresponding author: Indra priyadharshini K**

Department of Oral and Maxillofacial pathology, Vinayaka Missions Sankarachariyar Dental College, Vinayaka Missions Research Foundation, Salem

Unfortunately natural and manmade mass disasters are occurring more frequently in India with increasing crime like gang rape and child abuse. In these cases the bodies of victims become unidentified, where the vital role of general dentist comes into the main role in the identification of such individuals. Keeping this as the background, this present study was undertaken to evaluate knowledge and assess the awareness, importance of documentation and maintenance of dental records.

METHODOLOGY

Study Design

A cross-sectional study to assess the knowledge, awareness, attitude and practice of dental records for forensic investigation among 200 dental practitioner in Salem district. Data collection performed through questionnaire. Questionnaire were framed based on the practitioners encountering cases of forensic interest.

The questions were framed to assess the KAP criteria – knowledge, attitude and practice. Information was obtained on the following matters

1. Knowledge about the significance of dental records, dental age estimation, bite marks, forensic odontology programme awareness.

2. Attitude of the practitioners towards maintenance of dental records.
3. Practices about maintenance of dental records.

Pre evaluation of questionnaire was administered to a panel of five senior academicians and 10 dentist were gave the feedback on the overall acceptability, reliability and validity of the Questionnaire in terms of length, language clarity. Validity was assessed and it was observed that 95% of the participants found the questionnaire to be easy.

- ✓ Q1 – Year of clinical experience in dentistry?
- ✓ Q2 – Are you maintaining a complete dental record in your clinic ?
- ✓ Q3 – How long the records are maintained ?
- ✓ Q4 – How are the records maintained ?
- ✓ Q5 – Have you attended any forensic lecture / conference / CDE / Certificate course and impact in your day to day practice ?
- ✓ Q6 – Are you aware that out dental records are used for forensic investigation ?
- ✓ Q7 –Which of the following are important in forensic investigation ?

Inclusion Criteria: only private practitioners, both female and male doctors, dentist in Salem district, BDS & MDS all specialty

Exclusion Criteria: those who are not practicing, hospital setup, and neighboring district not included for the study.

Questionnaire was analyzed using survey monkey software. Data were collected and statistically analyzed by survey monkey software. Final Data was collected using survey monkey software Prepared questions were send through Whats App messenger and email.

RESULTS

About 200 questionnaires were distributed and the response rate was 100 %.

QA1 – Year of clinical experience in dentistry?

Clinical experience of the dental practioners about 79 % of general dentist (GD) are 5 years and above, of the remaining 21% less than 5 years.

QA2 – Are you maintaining a complete dental record in your clinic?

Only 49 % of GD’s always maintain dental records 45% GD ‘s used to store only selected cases and 5 % of them never stored or maintained. Among them only 66 % GD’s store dental cast and 53% store dental radiographs . (Figure :I)

QA3 – How long the records are maintained?

Many of the GD’s replied 32 % of them keep the records for 5 years and above, 3 to 5 years (26%) , 1 to 3 years (25%) , 1 years (12%).

QA4 – How are the records maintained?

60% of practitioners maintain the records in the form of hard copy and the remaining 32% store the records as soft copy.

QA5 – Have you attended any forensic lecture / conference / CDE / Certificate course and impact in your day to day practice? (Table I) (Figure – II)

QA6 – Are you aware that out dental records are used for forensic investigation?

79 % of the practioners were aware of the dental records used in forensic investigation.

QA7 –Which of the following are important in forensic investigation? (Figure – III) (Table II)

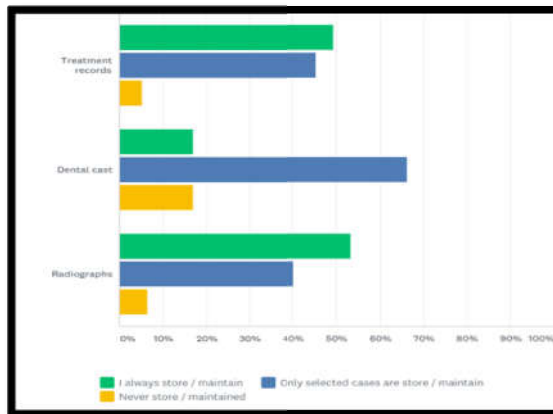


Figure I Graph showing the various participants maintaining the dental records of the patients

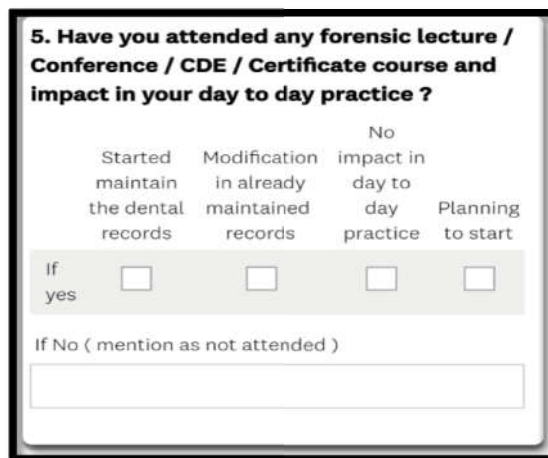


Figure II Q5- question regarding forensic lecturer and certificate course and impact in day to day practice

Table I Distribution of answer for Q5

ANSWER	STARTED MAINTAIN THE DENTAL RECORDS	MODIFICATION ALREADY MAINTAINED RECORDS	NO IMPACT IN DAY TO DAY PRACTICE	PLANNING TO START
IF YES	12.73%	16.36%	38.16%	34.55%
IF NO	30%			

7. which of the following are important in forensic investigation ? Tick whichever is applicable (multiple response are allowed)

Lip prints	<input type="checkbox"/>
Bite marks	<input type="checkbox"/>
Palatal rugae	<input type="checkbox"/>
Pulp tissue	<input type="checkbox"/>
Facial index	<input type="checkbox"/>
Odontometric analysis	<input type="checkbox"/>
Tooth prints	<input type="checkbox"/>
other specify	<input type="text"/>

Figure III (Q7) question regarding forensic methods and investigations

Table II distribution of answer for the Q7

INVESTIGATION TYPE	TOTAL RESPONDENTS
LIP PRINTS	39%
BITE MARKS	62%
PALATAL RUGAE	36%
PULP TISSUE	27%
FACIAL INDEX	38%
ODONTOMETRIC ANALYSIS	36%
TOOTH PRINTS	48%

DISCUSSION

Forensic odontology an important branch in dentistry helps in solving mysteries behind person identification in mass casualties. Identification of individuals is still challenging without the complete medical and dental history. Dental practitioners play a vital role in collecting and maintaining the valuable information in restoring the concerned patient’s identity. Hence awareness and importance of forensic dentistry is important among the practising dentist.

In present study only 49.35% of practitioners regularly maintaining the treatment records, also 54.05% of them routinely maintain the records of patient’s radiograph and 66.23% maintain records of dental cast in only selected cases. The results are in contrast to the study conducted by Nagarajappa *et al* 2014, where all the practitioners maintain the dental records.^[7]Waleed *et al* 2015 stated that students in college maintain the patient record regularly when compared to private practitioners^[8], also according to Rubel *et al* in 2017^[1] and Sarode *et al* in 2017 stated^[9] that 54% and 94% of the practitioners are maintaining the record routinely.

According to Nagarajappa *et al* study^[7](Kanpurcity) conclusion 87.8% of practitioners maintain the dental records for less than 3 years, In our study that only 25.97% of them maintain the records in the above mentioned duration. Also 60.27% of practitioners maintain the records as a hard copy and 32.88% maintain as a soft copy.

In present study 70% of practitioners attended forensic related conference and also made modification in the recording the details, whereas according to Sahni A *et al* in 2016^[10] and *et al* in Rathod V 2017^[11], 26% of practitioner were aware of formal training program centres available in India and 15 % of practitioners attended the training programs. The results are in contrast to study conducted by Narendranath Singh *et al* in 2014^[12] where 94% of practitioners were not aware of the training programs in forensic dentistry. In present study all the practitioners are aware that bite mark, lip print, palatal rugae, tooth prints and odontometric analysis are important for forensic investigation. According to Sanhi Ankita *et al*^[10] and Narendranath singh *et al*^[12], study stated that 30% and 58% did not know the significance of bite marks of teeth^[10]. Identification of individual is the first step in forensic investigation and it includes diagnosis of sex, age, teeth^[13, 14]. The teeth is durable in fire and bacterial decomposition. The pulp well protected by hard tissue serves as a valuable tool in forensic dentistry^[15, 16].

CONCLUSION

More awareness is required among the practitioners regarding proper record maintenance to enrich knowledge about forensic odontology. Standard norms for proper dental records keeping should be established. A governing body should be appointed to verify the already maintained dental records. Various guidelines to maintain proper dental records should be suggested.

Reference

1. Namrata Harchandani, Swati Marathe, Manjula Hebbale, Shams UNisa, Darshan Hiremutt. Awareness of Forensic Odontology among General Dental Practitioners in Pune - A Cross-sectional Study, J Adv Med and Dent Sci Res 2014; 2(3): 10-16.
2. Rubel M, P G Naveen Kumar , Sushanth V H, Mohamed Imranulla, Swati Mallick , Ipshta potlia. Awareness and compliance about Forensic odontology among dentist in Dental Colleges of Davangere city, Karnataka, India. Int J Biomed Res 2017; 8 (03):143-147.
3. Bagi BS. Role of forensic odontology in medicine. J Indian Dent Assoc. 1977; 49: 359–363.
4. Preethi S, Einstein A, Sivapathasundharam B. Awareness of forensic odontology among dental practitioners in Chennai: A knowledge, attitude, practice study. J Forensic Dent Sci. 2011; 3(2):63-66.
5. Priyadharshini KI, Ambika M, Sekar B, Mohanbabu V, Sabarinath B, Pavithra I. Comparison of cheiloscopy, odontometric, and facial index for sex determination in forensic dentistry. J Forensic Dent Sci 2018; 10:88-91.
6. Priyadharshini K I, Idiculla JJ, Sivapathasundaram B, Mohanbabu V, Augustine D, Patil S. Age estimation using development of third molars in South Indian population: A radiological study. J Int Soc Prevent Community Dent 2015; 5, Suppl S1:32-8.
7. Nagarajappa R, Mehta M, Shukla N, Tuteja JS, Bhalla A. Awareness of forensic odontology among dental practitioners in Kanpur city, India: a KAP study. J Dent Res 2014; 1(1): 6-12.
8. Waleed P, Baba F, Alsulami S, Tarakji B. Importance of dental records in forensic dental identification. Acta Inform Med 2015; 23:49-52.

9. Sarode SC, Zarkar GA, Kulkarni MA, Desai R. Role of Forensic Odontology in the World's Major Mass Disasters : Facts and Figures. *SADJ* 2009; 36(7):430-6.
10. Sahni A, Rehani S, Mathias Y, Kardam P, Nagpal R, Kumari R. A questionnaire survey on forensic odontology: Are we really aware? *J Forensic Dent Sci* 2016; 8:113.
11. Rathod V, Desai V, Pundir S, Dixit S, Chandraker R. Role of forensic dentistry for dental practitioners: A comprehensive study. *J Forensic Dent Sci* 2017; 9:108-9.
12. Narendra N S, Owais G, Tasneem S.A, Saima S. Exploring Trends in Forensic Odontology. *Journal of Clinical and Diagnostic Research*, 2014 Dec, Vol-8(12):ZC28-ZC30.
13. Khanna KS. Efficacy of sex determination from human dental pulp tissue and its reliability as a tool in forensic dentistry. *J Int Oral Health* 2015; 7(Suppl 2):10-6.
14. Kaushal S, Patnaik VVG, Agnihotri G. Mandibular canines in sex determination. *J Anat Soc India* 2003; 52:119-24.
15. Das N, Gorea K, Gargi J, Singh JR. Sex determination from pulpal tissue. *J Indian Acad Forensic Med* 2004; 26:50-4.
16. Murugesan A, Balakrishnan S, Kumaresan IP, Jayakumar A, Mohan J, Champakesan B. Cytological Method of Barr Body Expression in Dental Pulp Tissue at Varying Temperature. *J Orofac Sci* 2018; 10:108-11.

How to cite this article:

Indra priyadharshini K *et al* (2019) 'Documentation and Impact in Forensic Dentistry Among Salem Dentist', *International Journal of Current Advanced Research*, 08(04), pp. 18171-18174. DOI: <http://dx.doi.org/10.24327/ijcar.2019.18174.3467>
