

AWARENESS AND COMPLIANCE ABOUT FORENSIC DENTISTRY AMONG DENTAL PROFESSIONALS OF TWIN CITIES OF RAWALPINDI-ISLAMABAD: A QUESTIONNAIRE BASED STUDY

¹MUHAMMAD ZEESHAN BAIG, BDS, MCPS (Oral Surgery)

²KHALID MAHMOOD SIDDIQI, BDS, MDS (OMFS-QU)

³NUSRAT JABEEN, BDS, MSc (UK)

⁴MUHAMMAD ISRAR, BDS, MSc (UK), FDSRCPS (Glasgow), FFDRCSI (OS/OM), FFDRCSI(OS),
DIPMANG RCSI (UK)

⁵MUHAMMAD TAUQEER EHSAN, BDS (UHS)

⁶FAHAD RAHMAN, BDS (NUST)

ABSTRACT

The objective of the present study was to evaluate the awareness and compliance among dental surgeons working within twin cities about "forensic dentistry". Secondary objective was to evaluate the need of this specialty to be added in BDS curriculum as an independent subject or part of any major subject. This cross sectional Study was done in five teaching dental hospitals of Rawalpindi and Islamabad which are affiliated with Dental colleges.

318 questionnaires consisting of fourteen basic questions were distributed in the dental colleges/ hospitals selected for the study. Data were then compiled, categorized and analyzed using SPSS. The response rate was 93%. Participants who had never studied forensic dentistry at any level were 99.32% and who never got any formal training in forensic dentistry were 100%. Individuals who opted to study forensic as a subject if opportunity of training was given within Pakistan were 60%.

Forensic Dentist may play a major role in identification of those individuals who cannot be identified otherwise. Recent tragedies and situations have increased awareness concerning the importance of forensic dentistry in identification of victims especially in current era in Pakistan. Forensic dentistry must be introduced into the BDS curriculum effectively as a subject. Moreover, the likelihood of future disasters due to terrorism, earthquakes and other causes require the dental profession in Pakistan to be prepared for an ex-pended role.

Key Words: Forensic Odontology, Questionnaire

INTRODUCTION

Forensic Odontology or forensic dentistry was defined by Keiser-Neilson as "the branch of forensic medicine which deals with the proper handling, examination and presentation of dental evidence in the best interest of justice."¹

Forensic dentistry has become an integral part of forensic medicine over the past 100 years. It has gradually established itself as an important science in medico-legal cases since late 19th century. It is probably one of the fastest developing sub-disciplines of dental science. This may be attributed to the increase in mass disasters consequent to civil war, acts of terrorism and genocide where severe mutilation or burning of bodies may happen.^{1,2}

Based on the major fields of activity, Avon classified forensic odontology into civil, criminal and research.³ There are several areas of specialty with forensic dentistry, which include the assessment of bitemark injuries, assessment of cases of abuse (child, domestic partner, or family), identification of found human remains and identification in mass fatalities.⁴

¹ Senior Registrar, Department of Oral & Maxillofacial Surgery, Islamabad Medical and Dental College, Islamabad.

² Assistant Professor

³ Assistant Professor, Rawal Institute of Health Sciences, Islamabad.

⁴ Associate Professor, Head of Department, Oral & Maxillofacial Surgery, Islamabad Medical and Dental College, Islamabad.

⁵ Dental Surgeon, Punjab Social Security Hospital, Manga Mandi, Lahore

⁶ House Officer, Armed Forces Institute of Dentistry, Rawalpindi

Correspondence: Dr Muhammad Zeeshan Baig, House No 426, Street 36, I-8/2 Islamabad. Mob. No 03214669917
Email: zeesh7@hotmail.com

Received for Publication: March 11, 2014

Revision Accepted: April 28, 2014

Revision Accepted: May 3, 2014

Forensic Odontology is a relatively new science that utilizes the dentist's knowledge to serve the judicial system. Dentists qualified in forensic science are giving expert opinion in cases related to human or dental identification, bite-mark analysis, age estimation, craniofacial trauma, malpractices and multiple fatality incident management. Human identification relies heavily on the quality of dental records. Forensic odontologists can still contribute to the identity investigation in the absence of dental records through profiling the deceased person using features related to teeth.⁵

Along with other healthcare providers, dentists encounter cases of injuries which could be non-accidental. Detection, interpretation and management of these cases are important from a legal and humanitarian point of view. Dentists should be aware of the legal impact of those cases.²

Despite of the fact that forensic dentistry is one of the establishing modern field of dentistry in all over the world but in Pakistan, this subject is included as a topic in oral and maxillofacial surgery with five didactics lectures as showed on the website of Pakistan Medical and Dental Council (PM&DC). PM&DC is the regulatory body in Pakistan regarding the medical and dental education. Regulations given by PM&DC are followed by the universities; awarding BDS degrees in Pakistan.⁶ With the introduction of forensic odontology in the undergraduate curriculum, its teaching to undergraduate students is now necessary. Its coverage in the curriculum is basic, and that is all that is required at the bachelor level.

The Dental Council of India's curricular guidelines for forensic dentistry parallel those in foreign countries such as Australia, Norway, and Malaysia. Thirty hours of instructions which includes theory sessions as well as practical exercises are specified for forensic dentistry in spite of the fact that BDS in India is also of four academic years program like Pakistan.⁷

To evaluate the awareness and compliance of forensic odontology among dental graduates, a small questionnaire based survey was conducted at dental teaching hospitals of Rawalpindi & Islamabad the twin cities.

METHODOLOGY

This was a cross sectional study. Inclusion criteria for the present study was twofold; first the institutions, only dental hospital in twin cities affiliated with dental colleges which are considered, places for active academic teaching and second participants who had completed their graduation and working in these teaching dental hospitals were included. Ethical approval for the study was obtained from ethical committees of the respective colleges.

Questionnaire containing fourteen questions were distributed among dental professionals on working day early in the morning in five dental teaching hospitals affiliated with dental colleges. Information on nature of study was provided to all participants and consent implied by an individual's voluntary completion of questionnaire. Individual identification was not present in the questionnaire. Sufficient time was given to par-

TABLE 1: QUESTIONNAIRE RESPONSE PERCENTAGES

S. No.	Question	Yes	No	Don't Know
1	At under-graduate or post-graduate level have you studied the subject of "Forensic Odontology"?	2 (0.675%)	294 (99.32%)	Not an Option
2	Is forensic odontology part of BDS curriculum in Pakistan?	32 (10.81%)	189 (63.85%)	75 (25.66%)
3	Have you experienced cases where you think forensic odontologist's opinion was required?	27 (9.12%)	197 (66.55%)	72 (24.32%)
4	Did you ever receive formal training in the subject of forensic odontology?	0	296 (100%)	Not an Option
5	Your hospital or college has any forensic odontology department?	0	212 (71.62%)	84 (28.37%)
6	Should forensic odontology be taught as independent subject in BDS curriculum?	211 (71.28%)	31 (10.47%)	54 (18.24%)
7	Do you think any trained forensic odontologist exists in Pakistan?	25 (8.45%)	199 (67.22%)	72 (24.32%)
8	Would you like to do training courses in forensic odontology if given chances within Pakistan?	176 (59.45%)	45 (15.20%)	75 (25.33%)

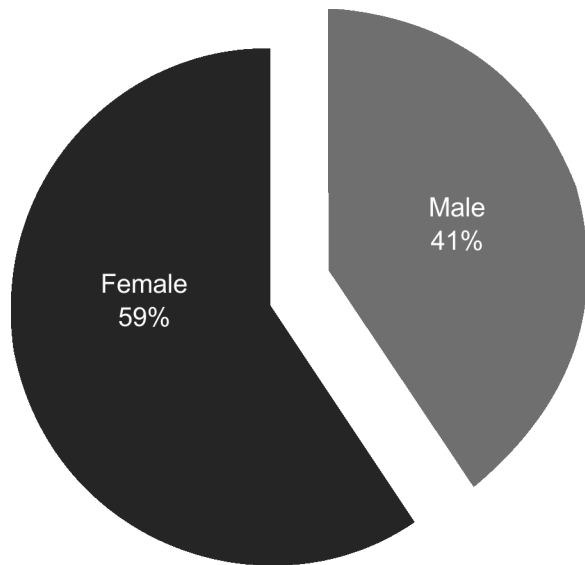


Fig 1: Male Female distribution

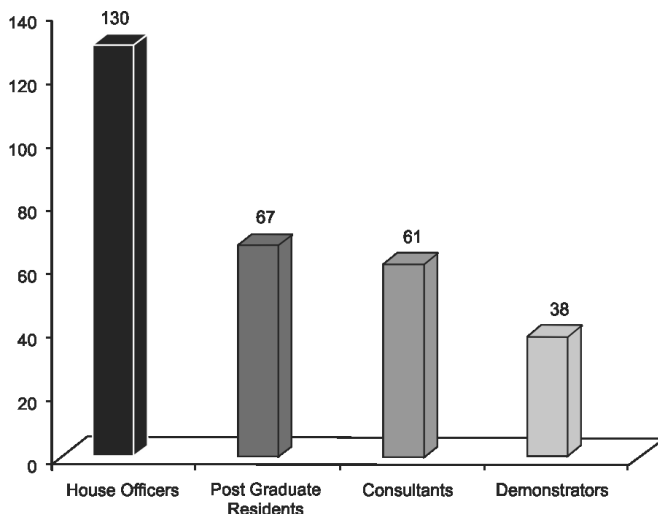


Fig 2: Designation Distribution

Participants to fill the questionnaire. These were collected from them at the end of the day near to closing time of their respective hospitals. Questions' responses were coded as numeric in order to facilitate the data entry and analysis by SPSS.

RESULTS

A total of 318 questionnaires were distributed to dental professionals and the response rate was 93% (296). Rest of the 22 participants did not respond or submitted incomplete forms which were excluded from the study. 42 forms were completely filled but age box was left empty. But they were considered valid for inclusion in studies. Male to female ratio was 1:1.4 which is illustrated in Fig 1.

Age ranged from 22 to 65 years. Work experience in dentistry ranged from less than a year to more than

30 years. Designation distribution is shown in Fig 2. House officers were largest in number (n-130).

Only two (0.675%) participants had studied forensic odontology in under-graduate or post-graduate courses. Majority of participants 189 (63.85%) were not aware regarding forensic odontology as part of BDS curriculum whereas 75 (25.33%) chose the option of don't know. None of the participant ever received any formal training in the field of forensic odontology at any academic level as well as they are not aware of forensic odontology department in their respective institute.

Only 27 (9.12%) respondents experienced cases where they thought that forensic odontologist's opinion was valuable and required. Participants who considered addition of forensic odontology as a proper subject in PM&DC curriculum for BDS under-graduate program are 211 (71.28%). Majority of the participant 199 (67.22%) did not know about any specialist in the field in Pakistan. 176 participants (59.45%) showed interest in formal training in the field of forensic odontology.

DISCUSSION

Forensic dentistry is defined as application of dental knowledge in the investigation of crime and administration of justice.⁸ It is a specialized field of dentistry related to legal problems.² It is probably one of the most rapidly developing specialties in the field of dentistry. This branch gives immense importance to dental evidence for the identification of victims and suspects in mass disasters, abuse and organized crimes. It has been utilized for many years; principally in the area of establishing identity in particular for identification of the dead.⁵

The use of dental records for identification appears in scattered instances throughout recorded history even in primitive forms in pre-historic times. According to the old testament of the Bible, Adam was convinced by Eve to put a 'bitemark' on the apple. This was the first reported evidence of bitemark in the history of mankind.⁹

The late president of Pakistan, General Zia-ul-Haq died in the year 1988 in a plane crash due to an explosion. He was identified from his dentition. The late Indian Prime Minister Mr. Rajiv Gandhi was assassinated in a terrorist attack in 1991 and was also identified from his dentition.¹⁰

The new millennium has brought many good things in our lives for example a boom in telecommunication and information technology etc. It has also brought new challenges of terrorism, natural disasters and high rate

of crime. Dental hard tissues are extremely resistant to fire and are usually the only remains after an extended period of burial.¹¹ These dental tissues can be used for identification as well as other legal procedures.¹²

Forensic dentistry is not yet fully flourished to its capacity. Present study clearly shows that dental graduates are totally unaware of the subject. Hundreds of cases are seen every year in Pakistan relating to identification problems and bite mark analysis which clearly shows the need of this specialty in this region.¹³ With passage of time there is increase in demand of forensic specialist all over the country due to the need of the present law and order situation.

Another finding in the present study is the participants who really don't know about BDS curriculum at all. There is also need to teach the students as well as teachers, about curriculum with its purposes and outcomes.

Authorities or regulatory bodies in Pakistan need to revise the dental curriculum and add forensic dentistry as an essential part of subjects like oral and maxillofacial surgery or oral pathology if not as an independent subject. This was also supported by the large number of participants in this study. It is also the duty of the university as well as institution to ensure the development of functional forensic department in their institute.

Response revealed that graduates were not at all aware of BDS curriculum by PMDC. They had no idea that forensic dentistry is part of any subject or independent subject and many opted for post-graduation courses if approved by PMDC like fellowship, masters or some short certified training courses. Apart from the basic practice of dentistry, additional extensive training is necessary to understand the different methods and to acquire modern technical skills associated with forensic odontology.¹⁴ There is a need to start the specialty training in forensic dentistry. A huge number of graduate doctors would definitely pursue the carrier as forensic odontologist. This in turn will improve the services to Pakistan judicial as well educational system.

CONCLUSION

Forensic Dentist may play a major role in identification of those individuals who cannot be identified

otherwise. Recent tragedies and situations have increased awareness concerning the importance of forensic dentistry in identification of victims especially in current era in Pakistan. Forensic dentistry must be introduced into the BDS curriculum effectively as a subject. Moreover, the likelihood of future disasters due to terrorism, earthquakes and other causes require the dental profession in Pakistan to be prepared for an ex-pended role.

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