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Awareness of forensic dentistry among medical and dentistry graduates and undergraduates in Telangana, India

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Abstract

Background: One of the main rivals in forensic medicine is forensic odontology. With the proper training in forensic dentistry, medical and dental professionals will be able to recognize and generate the relevant information at the right time to aid in criminal investigations. Medical and dental students' knowledge and awareness have a vital role in the caliber of medicolegal reports, such as those certifying age and identifying race and sex. Thus, they should have some understanding about and aptitude for forensic odontology. The study's objective is to determine how well medical and dentistry graduates and students understand forensic odontology.

Study design: 1000 medical and dental students from various colleges in Hyderabad, Telangana, India, participated in cross-sectional observational research in the Year between 2019-2021. The study made use of a 16-question multiple-choice questionnaire that had been previously prepared and verified. Results of the data analysis were reported as percentages.

Results: Most participants were able to accurately respond to questions based on fundamental information, while few were able to respond to questions based on in-depth knowledge. The requirement for keeping dental records was cited by 94% of interviewees. Yet, only 18% were aware of the time frame for maintaining dental data. Just 13% of participants were aware of Dimerjian's approach of age calculation from teeth, and only 12% of students were aware that the amylogenic gene may be used to determine sex.

Conclusion: This study demonstrates that although participants lacked in-depth information, they had a positive attitude and a fundamental understanding of forensic dentistry. Thus, that both medical and dental students receive practical training in the field of forensic dentistry, structured skill modules should be incorporated in the curriculum and correctly executed.

Keywords: Forensic odontology, dental records, bitemarks, forensic dentistry

Introduction

Forensic odontology is one of the most rapidly developing branches of forensic medicine. According to Keiser Neilsen forensic odontology is that branch of dentistry which in the interests of justice deals with the proper handling and examination of dental evidence and with the proper evaluation and presentation of dental findings. Dr. Oscar Amoedo is father of forensic dentistry.

If dental data are kept up to date, dental identification is among the most advanced comparative identification techniques. In civil situations like insurance claims, marital disputes, impersonation, licence and passport issuing, as well as criminal ones like rape and murder, identification is crucial. Human dentition varies greatly across individuals. Jaws and teeth are often shielded against mechanical stress and fire. Teeth are very hard to break down and decompose after death.

When Raja Jaichand of Canouj, who perished on the battlefield, was recognized using his fake anterior teeth in 1191, it was the first instance of identification using dentition in India. In India, forensic odontology specialists are in low supply. Poor-quality work is produced when forensic odontology-untrained doctors provide expert judgments.

Medical and dental professionals with appropriate knowledge of forensic Odontology will be able to identify and produce right data at right time which will help in criminal investigation. Knowledge and awareness of medical and dental students is significant factor that influences quality of medicolegal reports like certification of age, determination of race and sex. Hence

reasonably good knowledge and skill regarding forensic odontology should be known to them. This is first study in Southern India wherein we are assessing knowledge and awareness of forensic odontology among both medical as well as dental graduates and undergraduates.

Materials and Methods

Study design

1000 medical and dental students from various colleges in Hyderabad, Telangana, India. participated in cross-sectional observational research in the Year between 2019-2021.

Data collection

The study made use of a 16-question multiple-choice questionnaire that had been previously prepared and verified. 1400 students were given the questionnaire using Google Forms, and 1200 of them answered. Only finished forms were taken into account for analysis. The study comprised a total of 1000 students from the third part I and third part II MBBS batches, the third and final year of BDS students, as well as medical and dental interns.

Participation was voluntary. Participants were informed about purpose and objective of study. Data was analysed and results were expressed in percentage.

Results and Discussion

Out of 1000 respondents in the current survey, 71.4% were medical students and 28.6% were dental students; this discrepancy is mostly due to the BDS program's smaller enrollment capacity than the MBBS programs. Most participants (93.4%) were aware that forensic odontology involves teeth.

The results correspond with Mohit *et al.* study (96.69%) but contrast results in Abdul *et al.* study conducted in Saudi Arabia where 37.5% participants were unaware of branch called forensic odontology. 4,5 About 86.6% knew dentition is never same in two individuals. Similar results were seen in Mohit *et al.* study was 96.69% were aware of use of dentition in identification. 4 94% of participants were of opinion that there is need for maintaining dental records. But only 18% were aware of period for maintenance of dental records.

Results are like Harchandani *et al.* study where 19% had knowledge of period of maintenance of dental records. 6 In present study 67.7% students were aware of use of bite marks in identification and 77.4% participants had knowledge about uniqueness of lip print.

In Preethi *et al.* study about 82% participants knew the significance of bitemarks. But as per Monsy *et al.* study only 56.3% had knowledge of bitemarks and their impressions. And as per Abdul *et al.* study only 27.3% of undergraduates knew significance of bitemarks. 7,8,5 In this study when in depth questions were put forth regarding forensic dentistry participants were unable to answer them correctly. 12% of students knew that amelogenin gene can be used in determination of sex and only 13% participants were of dimerjian's method of age estimation from teeth. 42% of students were aware of race determination from teeth. Most of the participants (82.4%) had knowledge of use of teeth as source of DNA.

Results are similar to Mohit *et al.* study (81.8%) and Sahni *et al.* study (95%) but contrast results were seen in Abdul *et al.* study where only 41% of undergraduates were aware of the fact that teeth can be used as source of DNA. 4,9,5 In

present study about 95.2% students were of opinion that dental evidence is legally accepted in court of law, but 82% of them were unaware of period for maintaining dental records. Similar results were seen in Mohit *et al.* study (89.25%) and Monsy *et al.* study (77.9%) 4,8 When students were asked about subject of interest nearly half of them (48%) considered forensic odontology followed by Analytical toxicology (31.8%)

Conclusion

In the current study, forensic odontology was known to both medical and dental graduates as well as students, and almost half of them selected it as their area of interest. Medical and dental students shared a favorable perspective on forensic dentistry.

When given simple questions on forensic dentistry, students were able to respond to them correctly, but when given questions requiring more in-depth knowledge, only a small number of students were able to do so. Both dental and medical students have a respectable understanding of forensic dentistry. Nevertheless, information and a good outlook alone are insufficient unless they also learn skills, and now, they are not given any training throughout their MBBS or BDS degree. Structured skill modules should be taught in the curriculum and used properly to address the weakness.

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