

Awareness of forensic odontology among undergraduate, graduate, and postgraduate dental students in Riyadh, Saudi Arabia: A knowledge-, attitude-, and practice-based study

Nishath Sayed Abdul,
Lamya Alhazani¹,
Reem Alruwail¹,
Shrouq Aldres¹,
Shahd Asil¹

Faculty, Department of
Diagnostic Sciences and Oral
Maxillofacial Surgery, Riyadh
Elm University, ¹Dental Students,
Riyadh Elm University, Riyadh,
Kingdom of Saudi Arabia

Address for correspondence:

Dr. Nishath Sayed Abdul,
Department of Diagnostic
Sciences and Oral Maxillofacial
Surgery, Riyadh Elm University
(Formerly Riyadh Colleges of
Dentistry and Pharmacy),
King Fahd Highway, Namuthajiya
Campus, Riyadh 11681,
Kingdom of Saudi Arabia.
E-mail: nishathsayed@riyadh.
edu.sa

Abstract

Aims and Objectives: The aim of the study is to assess the knowledge, attitude, and practice (KAP) of forensic odontology among undergraduate, graduate, and postgraduate dental students at Riyadh Elm University, Riyadh, Saudi Arabia.

Material and Methods: This is a cross-sectional, institution-based survey study conducted among 400 dental students, which included 220 undergraduates, eighty interns, sixty graduates, and forty postgraduates aged, between 18 and 28 years. A self-administered structured questionnaire written in English and Arabic language was given to all willing student participants. Questionnaire included KAP criteria based along with demographic data. Statistical data were analyzed using Chi-square test. **Results:** Seventy-five percent of postgraduates, 42% of graduates, and 40.9% of the undergraduates were aware that teeth serve as a source of DNA. Ninety-five percent of the participants were aware that forensic dentistry helps to investigate criminals and dead persons. About 72% of the undergraduates and 77.5% of postgraduates were aware that forensic odontology helps in identification of deceased person's age and gender in mass disasters using dental records. About 62.73% of the undergraduates were unaware of the job opportunities in forensic dentistry in Saudi Arabia and 97.5% of the participants revealed that forensic dentistry was not included as part of the curriculum in undergraduate and postgraduate dental courses. About 93.2% of the undergraduate and 83.4% of graduate dental students agreed that they lack knowledge about forensic dentistry. **Conclusion:** Our study revealed inadequate knowledge, poor attitude, and lack of practice of forensic odontology among undergraduate and graduate dental students than the postgraduates.

Key words: Attitude, awareness, forensic odontology, Knowledge, Practice, Saudi Arabia

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Abdul NS, Alhazani L, Alruwail R, Aldres S, Asil S. Awareness of forensic odontology among undergraduate, graduate, and postgraduate dental students in Riyadh, Saudi Arabia: A knowledge-, attitude-, and practice-based study. J Forensic Dent Sci 2019;11:35-41.

Access this article online	
Website: www.jfds.org	Quick Response Code 
DOI: 10.4103/jfo.jfds_52_19	

Introduction

The term “forensic” is derived from the Latin word forensic, which means, “pertaining to the forum,” which means “court of law”, where trials and debates were held. Odontology refers to the study of teeth. Forensic odontology so has been defined by the Federation Dentaire International as that branch of dentistry, which in the interest of justice, deals with the proper handling and examination of dental evidence and the proper evaluation and preservation of dental findings.^[1] Forensic odontology has been classified into civic or noncriminal, criminal, and research. The entity of forensic dentistry comprises four areas of interest: Dental identification, Bite marks, Cheiloscopy (study of lip prints), and Rugoscopy (study of palatal rugae patterns).^[2] The important applications of forensic odontology include identification of human remains through dental records and assisting at the scene of crime; in cases of child or adult abuse through bite marks or physical injuries, determination of age and gender of the living or deceased and to testify as an expert witness in the court with forensic dental evidences.^[3] Although universally, forensic odontology has taken giant steps in the technical advancements, but in Saudi Arabia, this field of forensic dentistry is still miles behind and still in infancy. Very limited, studies were done in the past in this country, thus there is a wide literature gap related to forensic odontology in Saudi Arabia. The aim of the study is to fill this gap and assess the knowledge, attitude, and practice of forensic odontology among undergraduate, graduate, and postgraduate dental students at Riyadh Elm University (REU), Riyadh, Saudi Arabia.

Materials and Methods

Study design

This is a cross-sectional, institutional-based study conducted among 400 undergraduate, graduate, and postgraduate dental students of REU, Saudi Arabia.

Inclusion and exclusion criteria

The study included those dental students who were willing and available to participate and excluded all faculty, staff, and dental students not willing to participate in the study.

Ethical statement

The participants of the study were informed about the purpose and objective of the research and informed consent was obtained. Ethical clearance from the Institutional Review Board of REU with approval no. RC/IRB/2018/1192 was obtained.

Data collection

A self-administered structured questionnaire written in English and Arabic local language was distributed by survey among 400 dental students, which included 220 undergraduates, 80 interns, 60 graduates, and 40

postgraduates. Males 179 (44.75%) and females 221 (55.25%) aged between 18 and 28 years were included. The questions were both open-ended and close-ended. Information was obtained from demographic data of participants, which includes age, gender, and education level. The questionnaire was divided into three parts namely knowledge, attitude, and practice. The questionnaire [Table 1] consisted of twenty questions of knowledge-based, attitude-based, and practice-based questions.

Data analysis

The collected data were analyzed using IBM SPSS Statistics, Version 22.0 (Armonk, NY, USA). Data were analyzed using the Chi-square test.

Results and Observation

Demographic data

A total of 400 dental students completed the questionnaire, which included 220 undergraduates, 80 interns, 60 graduates, and 40 postgraduates. Males (179 [44.75%]) and females (221 [55.25%]) aged between 18 and 28 years were included.

Questions 1–9 were knowledge-based, questions 10–13 were attitude-based, and from 14 to 20 were practice-based questions on forensic odontology.

Q1. Do you know about forensic odontology as a branch in dentistry?

In our study, 62.5% of the participants were aware of the branch of science called forensic dentistry and about 37.5% of the participants were unaware of it.

Q2. Can teeth serve as a source of DNA?

Seventy-five percent of postgraduates, 40% of graduates, and 40.9% of the undergraduates were aware that teeth serve as a source of DNA [Table 2].

Q3. Is forensic dentistry useful in identifying criminals and the dead people?

Ninety-five percent of the participants were aware that forensic dentistry helps to investigate criminals and dead persons.

Q4. How do you identify the dental age in children and adults?

Fifty percent of the participants were aware of age estimation in children and adults by an eruption pattern of teeth. Twenty-five percent were unaware, and the remaining participants answered that histological and biochemical methods were used to identify the dental age.

Table 1: Questionnaire for survey

1. Do you know about forensic odontology as a branch in dentistry?
Yes/no

2. Can teeth serve as source of DNA?
Yes/no/don't know

3. Is forensic dentistry useful in identifying criminals and the dead people?
Yes/no/don't know

4. How do you identify the dental age in children and adults?
a. Eruption patterns and calcification
b. Histological methods
c. Biochemical methods
d. I don't know

5. How will you identify a deceased person's age and gender in mass disasters like fire, stampede and accidents?
a. Reconstruct the fragmented deceased body
b. Dental records
c. Fingerprints
d. I don't know

6. What is the study of lip prints in forensic dentistry called?
a. Lipology
b. Cheiloscopy
c. Dermatoglyphics
d. I don't know

7. Are you aware of the significance of bite mark pattern of teeth?
Yes/no

8. What is the source of your knowledge about forensic dentistry?
a. Books
b. Internet
c. I don't have knowledge
d. Scientific articles/journals
e. Workshops
f. Seminars
g. Undergraduate lectures
h. Postgraduate lectures

9. Do you think your knowledge and awareness about Forensic odontology is enough?
Yes/no/don't know

10. Are you willing to take courses in forensic odontology, if introduced as a diploma or postgraduate course?
Yes/no

11. Are you aware of jobs offers in forensic odontology in Saudi Arabia?
Yes/no/don't know

12. Are you interested to join forensic dentistry as a profession?
Yes/no
If no, why?
a. I don't like this subject
b. I don't want to be an expert to give witness in courts
c. I don't want to fall in legal matters concerning forensic dental cases
d. I don't think any bright future in this science/course
e. I don't earn enough money with this course

13. Are you interested to participate in workshops and seminars in forensic odontology?
Yes/no

Contd...

Table 1: Contd...

14. Do you maintain dental records in your clinic?
Yes/no

15. How will you identify physical/neglected/sexual/psychological abuse of a child by
a. Physical injuries
b. Behavioral changes
c. Clothing
d. Any scars
e. All the above
f. Don't know

16. What action would you take, if you identify child abuse?
a. Inform police
b. Inform parents
c. Take no action

17. Do you have any formal training related to forensic odontology?
Yes/no

18. Do you have forensic odontology as part of your curriculum or course outline?
Yes/no

19. Do you think Saudi Arabia has very limited resources/equipment to study forensic science?
Yes/no

20. Are you aware that you can testify as an expert witness in the court to present forensic dental evidence?
Yes/no

Q5. How will you identify a deceased person's age and gender in mass disasters like fire, stampede, and accidents?

Nearly, 72% of the undergraduates and 77.5% of the postgraduates were aware that forensic odontology helps in identification of deceased person's age and gender in mass disasters using dental records.

Q6. What is the study of lip prints in forensic dentistry called?

Only, 20% of the participants were aware that cheiloscopy is the study of lip prints in forensic dentistry. About 27.5% of postgraduates were able to answer it correctly, than the undergraduates (0.5%) and graduates (10%) [Table 3].

Q7. Are you aware of the significance of bite mark pattern of teeth?

About 87.5% of the postgraduates were aware of it, 27.3% of the undergraduates, and 50% of graduates were aware of its significance in forensic odontology.

Q8. What is the source of your knowledge about forensic dentistry?

Seventy-five percent of the participants replied that the source of their knowledge was through Internet, remaining 12.5% were in favor of books, journals, and workshops.

Q9. Do you think your knowledge and awareness about forensic odontology is enough? About 93.2% of the undergraduate and 83.4% of graduate dental students agreed for their lack of knowledge about forensic dentistry and only 12.5% of the postgraduates agreed for it.

Q10. Are you willing to take courses in forensic odontology, if introduced as a diploma or postgraduate course?

Only 52.5% of all the participants were willing to take forensic dentistry as a diploma or postgraduate course if introduced. Undergraduates and graduates showed lack of interest in this aspect, whereas 75% of postgraduates were affirmative [Table 4].

Q11. Are you aware of jobs offers in forensic odontology in Saudi Arabia?

About 62.73% of the undergraduates, 73.75% of interns, and 34.9% of graduates were not aware of jobs in this field. However, 87.5% of the postgraduate dental students were aware of it [Table 5].

Q12. Are you interested to join forensic dentistry as a profession?

About 78.7% of the undergraduates refused, as they do not want to get involved in legal matters. However, 82.5% of the postgraduates showed interest to undertake forensic dentistry as a profession.

Q13. Are you interested to participate in workshops and seminars in forensic odontology?

About 96.25% showed willingness to participate in workshops and seminars. Only 3.75% refused to participate.

Table 2: Can teeth serve as source of DNA?

Level of training	Yes, n (%)	No, n (%)	I don't know, n (%)	Total, n (%)
Undergraduates	90 (40.9)	13 (5.9)	117 (53.2)	220 (100)
Interns	60 (75)	8 (10)	12 (15)	80 (100)
Graduates	40 (66.6)	5 (8.3)	15 (25.1)	60 (100)
Postgraduates	30 (75)	4 (10)	6 (15)	40 (100)
Total	220 (55)	30 (7.5)	150 (37.5)	400 (100)
Statistical inference	Pearson $\chi^2=8.21$, $df=3$, $P=0.182$			

Df: Degree of freedom, P: Probability, n (%): Frequency

Table 3: What is the study of lip prints in forensic dentistry called?

Level of training	Cheiloscopy, n (%)	Lipology, n (%)	Dermatoglyphics, n (%)	I don't know, n (%)	Total, n (%)
Undergraduates	1 (0.5)	215 (97.7)	0	4 (1.8)	220 (100)
Interns	2 (2.5)	73 (91.25)	0	5 (18.75)	80 (100)
Graduates	6 (10)	43 (71.6)	0	11 (18.4)	60 (100)
Postgraduates	11 (27.5)	19 (47.5)	0	10 (25)	40 (100)
Total	20 (5)	350 (87.5)	0	30 (7.5)	400 (100)
Statistical inference	Pearson $\chi^2=4.65$, $df=4$, $P=0.213$				

Df: Degree of freedom, P: Probability

Q14. Do you maintain dental records in the clinic?

About 87.5% of the participants maintained the dental records and 12.5% dental students did not maintain dental records in the clinic and 25% of the participants maintained the dental records for <7 years.

Q15. How will you identify physical/neglected/sexual/psychologically abused child patient?

Twenty-five percent of the participants agreed that the child abuse cases were identified by all of the following which includes physical injuries, scars, clothing, and behavioral changes. About 12.5% of the participant did not know to identify child abuse cases. The remaining participants identified either by physical injuries or by clothing or behavioral changes.

Q16. What action would you take, if you identify child abuse?

Twenty-five percent of the participants were in favor of reporting to the police and about 62.5% of the participants said that they would report to the parents and 12.5% of them refused to take any action.

Q17. Do you have any formal training related to forensic odontology?

About 85% of the participants stated that they had no formal training in collecting, evaluating, and presenting dental evidence. Only 15% of the participants agreed affirmative [Table 6].

Q18. Do you have forensic odontology as part of your curriculum or course outline?

About 97.5% of the participants revealed that the forensic dentistry was not included as part of their curriculum during undergraduate and postgraduate courses. About 50% of them agreed that it should be included for both undergraduate and postgraduate dental curriculum.

Q19. Do you think Saudi Arabia has very limited resources and equipment to study forensic science?

Table 4: Are you willing to take courses in forensic odontology if introduced as diploma or postgraduate course?

Level of training	Yes, n (%)	No, n (%)	Total, n (%)
Undergraduates	110 (50)	110 (50)	220 (100)
Interns	45 (56.25)	35 (43.75)	80 (100)
Graduates	25 (41.7)	35 (58.3)	60 (100)
Postgraduates	30 (75)	10 (25)	40 (100)
Total	210 (52.5)	190 (47.5)	400 (100)
Statistical inference	Pearson $\chi^2=4.241$, df=2, P=0.208		

Df: Degree of freedom, P: Probability

Table 5: Are you aware of job offers in forensic odontology in Saudi Arabia?

Level of training	Yes, n (%)	No, n (%)	I don't know, n (%)	Total, n (%)
Undergraduates	75 (34.09)	7 (3.18)	138 (62.73)	220 (100)
Interns	20 (25)	1 (1.25)	59 (73.75)	80 (100)
Graduates	20 (33.3)	1 (1.6)	39 (34.9)	60 (100)
Postgraduates	35 (87.5)	1 (2.5)	4 (10)	40 (100)
Total	150 (37.5)	10 (2.5)	240 (60)	400 (100)
Statistical inference	Pearson $\chi^2=4.013$, df=4, P=0.363			

Df: Degree of freedom, P: Probability

Table 6: Do you have any formal training related to forensic odontology?

Level of training	Yes, n (%)	No, n (%)	Total, n (%)
Undergraduates	2 (0.9)	218 (99.1)	220 (100)
Interns	10 (12.5)	70 (87.5)	80 (100)
Graduates	23 (38.3)	37 (61.7)	60 (100)
Postgraduates	25 (62.5)	15 (37.5)	40 (100)
Total	60 (15)	340 (85)	400 (100)
Statistical inference	Pearson $\chi^2=4.852$, df=3, P=0.953		

Df: Degree of freedom, P: Probability

About 92.5% of the participants agreed to have limited resources to study forensic dentistry in Saudi Arabia.

Q20. Are you aware that as a dentist you can testify as an expert witness in the court to present forensic dental evidence?

Eighty percent of the participants were aware that the dentists have to testify as an expert witness in the court of law with forensic dental evidence. Only 20% of them were not aware of it.

Discussion

Forensic dentistry is a challenging and fascinating branch of forensic science that involves the application of dental sciences in the identification of a person living or dead. Very limited data were available about this field as research in Saudi Arabia. This study was undertaken to fill this gap, and it is first of its kind in Saudi Arabia, as this will help to explore and assess the knowledge, attitude, and awareness of forensic odontology among

undergraduate, graduate, and postgraduate dental students of an university in Saudi Arabia and gives an insight into the significance of this field in reducing the crime rate, illegal birth rates, illegal immigrants, and identification of individuals in mass disasters and holy pilgrimages in Saudi Arabia.

The present study revealed that 77.5% of the participants were aware of the role of dentists in mass disaster, which, in contrast to other studies that showed only 31.6% and 59.4% awareness in this aspect.^[4,5]

There is a need for maintaining dental records officially and professionally to protect against any medicolegal litigation. In the studies conducted by Al Khalaf *et al.*^[6] and Anwar Ali *et al.*,^[7] it was revealed that 88.5% and 87% of the participants maintained dental records, which corresponds to the present study but contradicts to the Australian-based studies by Al-Azri *et al.*^[8] had revealed that the dental records of forensic significance were not recorded. Knowledge about bite marks was found to be adequate among postgraduates than the undergraduates in the present study, which is similar to studies by Juber *et al.*^[9] Other studies revealed that the knowledge about bite marks was not known to 18% of the dental practitioners.^[10] Whereas, in the studies conducted by Nagarajappa *et al.*,^[11] about 71.4% of the participants were aware of lip prints.

In Saudi Arabia, recognition of child abuse is improved due to the establishment of child protection centers in medical facilities, but awareness of these cases among practicing dentists was found inadequate, due to lack of exposure to the branch of forensic dentistry in this country. About 88.3% of the dental practitioners reported that they never suspected cases of child abuse among their patients, as they were not aware of the signs and symptoms of child abuse.^[12] In the present study, the source of knowledge for the participants was through internet followed by books and journals, which is similar to studies, and 89.6% of undergraduate dental students in India believed that this science has good scope as a profession,^[13] which is in contradiction to the present study where only 30% of the participants showed interest to take it as a profession. The other studies revealed that the source of knowledge was from dental curriculum, lectures, and workshops.^[14,15]

In the present study, about 85% of the participants lacked formal training at the undergraduate and postgraduate levels similar to the studies by Navya and Raj.^[16]

In the present study, the knowledge and awareness of postgraduates are adequate than the undergraduate dental students, which is similar to the other studies.^[4,5,14,15] However, contradicts studies by Hannah *et al.*^[13] that

revealed adequate knowledge among undergraduate dental students than the postgraduates. Adequate knowledge and awareness were found among dental practitioners in few studies.^[9,17] However, inadequate knowledge and practice was revealed among Saudi, Indian, and Nigerian dental practitioners.^[6,17-20]

In a Saudi-based study, it was revealed that there are no guided protocols to follow, either to the training personnel or to the dental or medical professionals dealing with forensic cases. It is not included in the curriculum of undergraduates or postgraduate dental students. This study concluded that there is no solid forensic odontology system in Saudi Arabia that can preserve the integrity of law and protection of human rights.^[21]

In Saudi Arabia, there is lack of exposure to this branch of science, as it is not included in the dental curriculum for undergraduates and as there are no workshops, seminars, and continuing dental education programs for postgraduates. This suggests that there is a need for further exposure and formal training is necessary to bring awareness among all health-care providers the significance of forensic odontology in the society.

Strengths and limitations of the study

There are many studies carried out on forensic odontology in other parts of countries, but very limited studies were done in Saudi Arabia among dental students. Therefore, this study was the first of its kind in Saudi Arabia, which targets the undergraduate, graduate, and postgraduate dental students to assess their knowledge, attitude, and practice of forensic odontology. On the other hand, this study is institution-based targeted on specific population of a particular region or province and is not representative of the kingdom of entire Saudi Arabia. Therefore, further studies should be done in multiple regions or provinces, involving different populations of Saudi Arabia.

Conclusion

Our study revealed inadequate knowledge, poor attitude, and lack of practice among undergraduate dental students than the postgraduates. The lack of knowledge among dental students at undergraduate levels is due to lack of formal training, lack of study materials, and lack of forensic odontology as a part of dental curriculum in Saudi Arabia. This condition, however, can be improved if necessary steps are taken to make forensic odontology as a part of dental curriculum in Saudi Arabia.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Acharya AB, Sivapathasundharam B. Forensic odontology. In: Rajendran R, Sivapathasundharam B, editors. *Shafer's Textbook of Oral Pathology*. 8th ed. India: Elsevier Publication; 2017. p. 716-39.
2. Avon SL. Forensic odontology: The roles and responsibilities of the dentist. *J Can Dent Assoc* 2004;70:453-8.
3. Namrata H, Swati M, Manjula H, Ul Nisa S, Darshan H. Awareness of forensic odontology among general dental practitioners in Pune – A cross sectional study. *J Adv Med Dent Scie Res* 2014;2:10-6.
4. Sharma A, Shokeen S, Arora R, Dhaginakatti SA. Survey on knowledge, attitude and practice of forensic odontology among private dental practitioners in Ghaziabad city, India. *J Dent Spec* 2015;3:43-7.
5. Shivani B, Arshroop K, Karanprakash S, Mahjeet SP, Navgeet P, Chitra A. Perception of forensic odontology and its practice among local dentists of an institution. *J Forensic Res* 2017;8:1-4.
6. Al Khalaf AH, Al Nahawi DE, Al Naser HH, Nazir MA. The knowledge and practice of forensic dentistry among dental practitioners in the Eastern Province, Saudi Arabia. *Int J Adv Res* 2017;5:1971-8.
7. Ali A, Khurram PS, Sadif N, Syeda MW. Knowledge, attitude and practice of forensic odontology among graduates and postgraduates at Dow University of health sciences (DUHS). *JPDA* 2016;25:110-4.
8. Al-Azri AR, Harford J, James H. Awareness of forensic odontology among dentists in Australia: Are they keeping forensically valuable dental records? *Aust Dent J* 2016;61:102-8.
9. Juber R, Samapika R, Sudhanshu SM, Ipsita M, Neeta M, Narayan S. Knowledge, awareness and practice of forensic odontology among dental surgeons in Bhubaneswar, India. *J Unexplored Med Data* 2017;2:26-33.
10. Preethi S, Einstein A, Sivapathasundharam B. Awareness of forensic odontology among dental practitioners in Chennai: A knowledge, attitude and practice study. *J Forensic Dent Sci* 2011;3:63-6.
11. 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 Updates* 2014;1:6-12.
12. Al Sheddi M, Al Asiri A. Awareness of the scope and practice of forensic dentistry among dental practitioners. *Aust J Forensic Sci* 2015;47:194-9.
13. Hannah R, Pratibha R, Anuja N, Herald JS, Gheena S, Abhilasha R, *et al.* Evaluation of knowledge, attitude and practice of forensic odontology among undergraduates dental students. *Int J Orofac Biol* 2017;1:16-20.
14. Sushma R, Nagabhushana D, Chandrashekar BR, Maurya M, Sreeshyla HS. Forensic odontology acquaintance among the students of a dental institution in Mysore city, India. *Int J Forensic Odontol* 2017;2:13-7.
15. Govindaraj S, Jayanandan M, Vishnu Priya V, Thirumal R, Shamsudeen S. Knowledge and attitude among senior dental students on forensic dentistry: A survey. *World J Dent* 2018;9:187-91.
16. Navya N, Raj JD. To assess the knowledge and attitude towards forensic odontology among dentists in Chennai city. *Int J Forensic Odontol* 2016;1:17-20.
17. Rubel M, Prashant GM, Naveen Kumar PG, Sushanth VH, Imranulla M, Swati M, *et al.* Awareness and compliance about forensic odontology among dentists in dental colleges of Davangere city, Karnataka, India. *Int J Biomed Res* 2017;8:143-7.

18. Vanita R, Veena D, Rashmi C. Role of forensic dentistry for dental practitioners: A comprehensive study. *J Forensic Dent Sci* 2017;9:108-9.
19. Duraimurugan S, Gokkulakrishnan S, Karthikeyan M, Suresh KG, Abishek RB, Srinivasalu P. Awareness of forensic dentistry among dental students and practitioners in and around Kanchipuram district. *Int J Recent Sci Res* 2017;8:16749-52.
20. Ugbodaga PI, Okoh DS, Egbor PE. Awareness of forensic odontology among Nigerian dentists: A knowledge, attitude and practice study. *Afr J Oral Maxillofac Path Med* 2015;1:51-7.
21. Al Qahtani S, Al Shahrani Y, Al Wahtani A. Reality of forensic odontology in Saudi Arabia. *Rev Bras Odontol Leg* 2017;4:12-21.