

QUALITY OF RECORDS KEEPING BY UNDERGRADUATE DENTAL STUDENTS IN IBADAN, NIGERIA

E.B. Dosumu¹, O.O. Dosumu² and F.B. Lawal³

1. Department of Periodontology and Community Dentistry, University College Hospital, Ibadan, Nigeria
2. Department of Restorative Dentistry, University College Hospital, Ibadan, Nigeria
3. Department of Periodontology and Community Dentistry, University College Hospital, Ibadan, Nigeria

Correspondence:

Dr. Elizabeth B. Dosumu

Dept. of Periodontology & Comm. Dentistry,
University College Hospital,
PMB 5116, Ibadan, Nigeria.
Phone: +2348034086922
E-mail: edosumu18jj@mail.com

ABSTRACT

Background: Recording the interaction between a patient and the dentist is of primary importance in dental practice. The completeness of recordings of undergraduate students, often inadequate, has been found to subsequently impact on the quality of dental care offered by professionals. Once identified, correcting the inadequacies has also been shown to improve the quality of dental practice.

Objective: We aimed to evaluate the quality of records keeping by dental students in Ibadan, Nigeria.

Method: A retrospective review of records of patients seen by dental students, at the clinics of the dental school in Ibadan, Nigeria, over a six months period was conducted. The charts were reviewed for: demographic data, medical and dental history, clinical findings, diagnosis, treatment plan and note on informed consent. Assessment of the quality of data obtained was done using a modified CRABEL's scoring system.

Results: A total of 318 case files were retrieved for this study. The median modified CRABEL score was 95%, with a range of 65 to 95%. Eighty-two recordings (25.2%) had a score < 90%, while 236 recordings (74.2%) had a score ≥ 90%. The most frequently unrecorded data was written consent in all the charts, followed by procedure done with the documentation absent in 20.4%. All the supervisors signed at the end of the consultation.

Conclusion: The quality of records keeping by dental undergraduates is fair but there is a need to emphasize deficient areas and improve upon the quality of record keeping.

Keywords: dental record, students, CRABEL score

INTRODUCTION

Dental record is a detailed and continuous documentation of the patient's oral condition, contributing to diagnosis and orderly delivery of treatment to the patient^{1,2} and it aids in the proper and adequate management of patients. The numerous functions of dental records have been widely documented and these include: use in research, administrative, financial, quality assurance, forensic and medico legal issues.^{3,4} These functions are important and valuable to patient care, as good records help in assessing the quality of care while a poor one fails to. Previous studies have shown that dental records keeping are inadequate.^{1,5,6} These inadequacies can however be assessed from the beginning, that is, while

the dentists are still under training. This will form a part of assessment of the quality of training and even influence the way that undergraduate students are being taught and/or supervised in the clinics. Evidence has shown that records keeping among undergraduate dental students in the United Kingdom was far from optimal prior to when training was commenced.⁷ The resourcefulness of dental students during their training has been noted to impact on the eventual practice of dentistry.^{8,9} Consequently, the quality of records keeping by students will be a predictor of future practice behaviour. Improvement of the quality of records keeping, after establishing a baseline degree of accuracy

and quality, will lead to overall improvement in the care of dental services offered to communities.

It has however been observed that there is no documentation about clinical dental records keeping amongst undergraduate students in this part of the world. The aim of this study therefore is to assess dental records keeping amongst undergraduate dental students undergoing clinical training in Nigeria.

MATERIALS AND METHODS

A retrospective, descriptive study of the dental recordings carried out by undergraduate dental students between January 2006 and June 2006 at the Dental Centre, University College Hospital, Ibadan, Nigeria, was conducted. Ethical approval was obtained from the Institution's Ethical Review Board.

The Dental Centre, University College Hospital, Ibadan is the teaching hospital arm of the Faculty of Dentistry of the University of Ibadan, Ibadan, Nigeria, the first University in Nigeria, the country with the largest population in Africa. Undergraduate dental students of the university rotate in their clinical years through the hospital, and participate in the active management of acute and chronic dental conditions, from the initial clerking of patients to formulating a treatment plan and carrying out this plan of action as well as follow-up of the patients.

The case files of the patients seen by dental students at the out-patient clinic of the dental centre of the hospital

were reviewed over the six months period. The most recent entry in the case files was examined and information obtained on: date of documentation, demographic data, presenting complaint of the patient, past dental history, past medical history, and drug history. Others included: examination findings (of the patient), diagnosis, treatment plan, procedure done, signatures of the student and the supervising dentist, and indication of the department where the patient was seen.

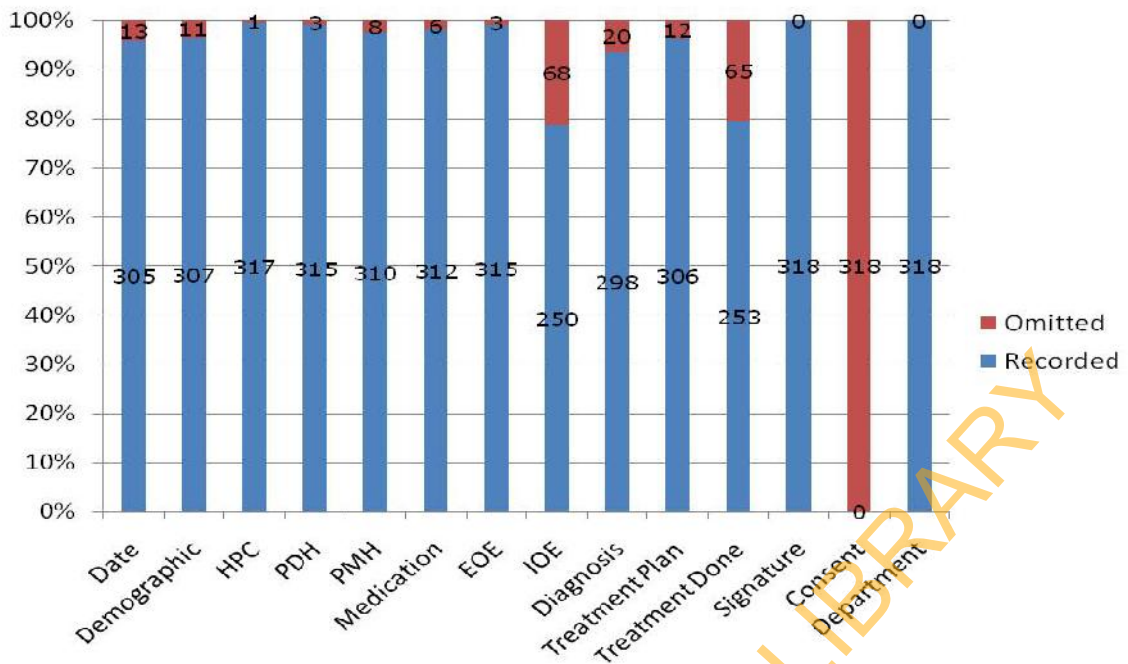
The data retrieved was scored and rated using a modification of the CRABEL scoring system by **CRAWford, BEresford and Lafferty**.¹⁰ This scoring system was based on guidelines and principles of the Royal College of Surgeons for medical records usually for in-patients.¹¹ However, it was modified and used for the scoring in this study based on the basic requirements for dental records done through literature search.⁷ The CRABEL scoring system makes use of 100% from which deductions are made if any of the records are missing. The modified CRABEL scoring system used for this study is shown in Table 1. Data was computed using SPSS version 16 software. Results were presented as percentages and mean values used where appropriate.

RESULTS

A total of 318 case files of patients seen by undergraduate clinical students at the dental centre were retrieved during the study period. The recording of the patients' information by the students were reviewed

Any missing item results into subtraction of the number written in front of the item from the original 100 score.	
DATE	10
DEMOGRAPHIC DATA	
Name, age, gender, marital status, address	10
Case note number	10
HISTORY	
History of presenting complaint	5
Medical history	5
Dental history	5
Drug history	5
EXAMINATION	
Extra oral	5
Intraoral	5
DIAGNOSIS	5
TREATMENT PLAN	10
PROCEDURE DONE	10
VALID CONSENT	5
SIGNATURES – STUDENT & SUPERVISING DENTIST	5
DEPARTMENT	5

Table 1: Modified CRABEL scoring system used to assess the adequacy of the records taken by the dental students.



(HPC – History of Presenting Complaints, PDH – Past Dental History, PMH – Past Medical History, Medication – Medication History, EOE – Extra Oral Examination, IOE – Intra Oral Examination).

Figure 1: The frequency of recorded and omitted information in the charts of the patients

using the modified CRABEL score according to groups of related indices: date recording was made, demographic data, history, examination, diagnosis, and treatment.

Date

The date of most recent entry in the case file was noted. This was accurately recorded in 305 (95.9%) cases (Figure 1). The date was omitted from the recording of 13 patients (4.1%).

Demographic data

The demographic data reviewed included the name, age, gender, marital status, address, and case note number. The demographic data were recorded completely in 307 (96.5%) patient's charts. Parts or all of the demographic data were absent in the recordings of 11 patients (3.5%).

History

The histories of presenting complaints of the patient were documented in 317 (99.7%) charts. Only 1 student (0.3%) failed to document the history of presenting complaint of the patient that he/she saw. The past dental history was available in the recordings of 315 (99.1%) charts, while this information was missing in 3 (0.9%) charts. The past medical history of the patient was recorded in 310 (97.5%) case notes, and eight students (2.5%) omitted this information. The medications that the patients were receiving at the time

of clerking were recorded in 312 (98.1%) cases. Six students (1.9%) did not document this aspect of the patient's history.

Examination

The examinations were divided into extraoral and intraoral. Extraoral examination findings were documented in 315 (99.1%) case files. Three students (0.9%) did not document the findings on extraoral examination of the patient. The findings on intraoral examination were accurately recorded by 250 students (78.6%) while 68 students (21.4%) did not document their findings.

Diagnosis

A total of 298 students (93.7%) wrote a diagnosis in the patient's case note. The diagnosis was missing in the recording of 20 students (6.3%).

Treatment

A plan of treatment was available in the documentation made by the students in 306 (96.2%) case notes. Twelve students (3.8%) did not write their plan of treatment for the patient. The treatment done by the student was documented in 253 (79.6%) cases and this information was absent in 65 (20.4%) cases. All the students (100%) who recorded in the charts used for this study and their supervisors (100%) signed in the case note at the end of the consultation. None of the students (0%) documented that a valid consent was taken. The

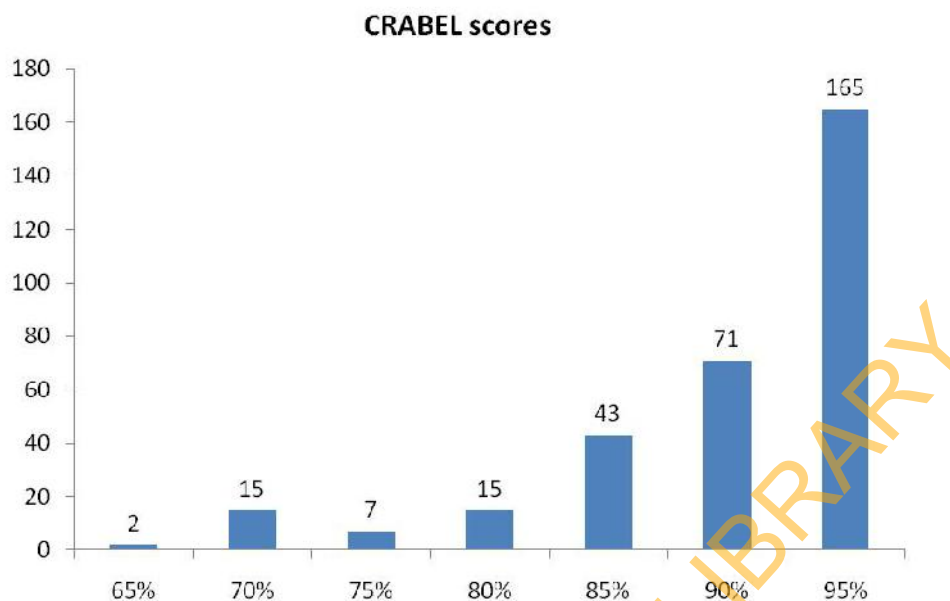


Figure 2: The CRABEL scores of the recordings by the students obtained from the case notes.

department where the consultation took place was accurately written in all (100%) the case notes.

CRABEL score

The median CRABEL score was 95%, with a range of 65 – 95% (Figure 2). The mean CRABEL score was 90 ± 0.39 %. Eighty-two recordings (25.8%) had a CRABEL score less than 90%, while 236 recordings (74.2%) had a score of 90% and above.

DISCUSSION

Record keeping in dental practice, is a primary responsibility of the dentist, serving the overall goal of protecting both the patient and the dentist.^{6,12} It is a vital reminder of the patients' dental condition, medication and medical state relevant to treatment.^{3,13} It is also the basis of establishing a trust between the patient and care-giver. The clinic set-up is the usual location for obtaining most of these records, primarily from the patient and recorded by the clinician. The nature of dental education, which specifies a considerable amount of hands-on by the undergraduate students as a prerequisite of their training, has been noted as peculiar to the profession.^{8,14} The quality of training that these undergraduate students receive, therefore, will likely have a snow-balling effect on the quality of their practice as dentists later on. Inadequacies noted in undergraduate dental curricula, when corrected, serve to improve the quality of service rendered by dental professionals.^{8,14} The assessment of the quality of medical records generally has been difficult to perform in the past.^{10,11}

The major challenge to doing so has been the lack of objectivity in the evaluation of such records.¹⁰ This led to the development of scoring systems, most notably the CRABEL score, which has been documented to be effective, objective and reproducible in the evaluation of the accuracy and adequacy of medical records.^{7,10} The original CRABEL score was used for in-patient records in medical settings. In a bid to widen the applicability, Pessian⁷ used the CRABEL score in dental out-patients and found it to be a valid tool to evaluate the adequacy of recording of dental out-patient interactions. The CRABEL score has also been used in our environment, although this was in a maxillofacial surgery in-patient sample.¹⁵

The CRABEL score, in this study, ranged from 65 to 90%, which is well above average. This is in contrast to a study conducted on 100 undergraduate dental students in the United Kingdom in which the CRABEL score ranged from 10 to 100%.⁷ In that study, it was concluded that the CRABEL score was far from optimal.⁷ The difference in the CRABEL score reported by Pessian and Beckett in the above mentioned study may be due to the smaller sample size and the assessment being done on 4th and 5th year students compared with 5th and 6th year students in our study. Additionally, the presence of a supervisor (resident or consultant staff) who co-signed the documentation, in our setting, may have improved the quality of the recordings that were done.

The most frequently unrecorded item, in the study (Figure 1), was valid consent. Conversely, the most frequently unrecorded information in another study, on record taking by undergraduate dental students was the department where the consultation took place.⁷ The finding in our study may be due to the fact that most of the consents taken, in our dental clinics, because of cultural reasons, are verbal. Documented valid consents are usually reserved for minor or major oral surgical procedures,¹⁵ and these are taken by residents or consultant staff. However, because of the increasing cases of litigations, there is a need to employ the written consent format for all procedures done.¹⁶ In the present study, the department where the consultation took place, signature and the signature of the supervising dentist were present in all the records taken by the students. This is probably because students in this institution are mandated to write their names in the signature column after completion of any documentation in the case files of patients. Additionally, the name and signature of the resident/consultant must be by the side of their names. This guideline was instituted by the Faculty of Dentistry to ensure adequate supervision of students. Overall, it can be stated that records keeping by undergraduate dental students is good, which is in support of previous studies that showed that record keeping is better among younger dentists,¹² although not yet qualified as dentists, undergraduate students still fall into this category.

CONCLUSION

The quality of records keeping among undergraduate dental students in Ibadan, Nigeria is above average and near optimal. This is due to close supervision of resident and consultant staff, as well as the utilization of established protocol on certain items that must be present before the students can be signed up as having completed the clinical rotation.

REFERENCES

1. **Cole A**, McMichael A. Audit of dental practice record-keeping: a PCT-coordinated clinical audit by Worcestershire dentists. *Prim Dent Care* 2009; 16(3): 85 – 93.
2. **Osborn JB**, Stoltenberg JL, Newell KJ, Osborn SC. Adequacy of dental records in clinical practice: a survey of dentists. *J Dent Hyg* 2000; 74(4): 297 – 306.
3. **Charangowda BK**. Dental records: an overview. *J Forensic Dent Sci* 2010; 2(1): 5 – 10.

4. **Heilminen SE**, Vehkalahti M, Murtomaa H, Kekki P, Ketomäki TM. Quality evaluation of oral health record-keeping for Finnish young adults. *Acta Odontol Scand* 1998; 56(5): 288 – 292.
5. **Morgan RG**. Quality evaluation of clinical records of a group of general dental practitioners entering a quality assurance programme. *Br Dent J* 2001; 191(8): 436 – 441.
6. **Ireland RS**, Harris RV, Pealing R. Clinical record keeping by general dental practitioners piloting the denplan ‘excel’ accreditation programme. *Br Dent J* 2001; 191 (5): 260 – 263.
7. **Pessian F**, Beckett HA. Record keeping by undergraduate dental students: a clinical audit. *Br Dent J* 2004; 197(11): 703 – 705.
8. **Albino JE**, Young SK, Neumann LM, *et al*. Assessing dental students’ competence: best practice recommendations in the performance assessment literature and investigation of current practices in predoctoral dental education. *J Dent Educ* 2008; 72(12): 1405 – 1435.
9. **DePaola DP**, Slavkin HC. Reforming dental health professions education: a white paper. *J Dent Educ* 2004; 68(11): 1139 – 1150.
10. **Crawford JR**, Beresford TP, Lafferty KF. The CRABEL score – a method for auditing medical records. *Ann R Coll Surg Engl* 2001; 83: 65 – 68.
11. The Royal College of Surgeons of England. Guidelines for clinicians on medical records and notes. *AMRO* 1990; 31(3): 18 – 20.
12. **Dierickx A**, Seyler M, de Valck E, Wijffels J, Willems G. Dental records: a Belgium study. *J Forensic Odontostomatol* 2006; 24(1): 22 – 31.
13. **Martín-García P**, Ríos-Santos JV, Segura-Egea JJ, Fernández-Palacin A, Bullon- Fernández P. Dental audit (I): exact criteria of dental records; results of a phase-III study. *Med Oral Patol Oral Cir Bucal* 2008; 13(7): E407 – E413.
14. **Iacopino AM**. The influence of “new science” on dental education: current concepts, trends, and models for the future. *J Dent Educ* 2007; 71(4): 450 – 462.
15. **Arotiba JT**, Akinmoladun VI, Okoje VN. An audit of medical record-keeping in maxillofacial surgery at the University College Hospital, Ibadan, using the CRABEL scoring system. *Afr J Med Med Sci* 2006; 35(1): 93 – 95.
16. **Speidel TM**, Jerrold L. Litigation, legislation, and ethics. Record keeping to avoid or defend lawsuits: a defense attorney’s perspective. *Am J Orthod Dentofacial Orthop* 2004; 125(6): 754 – 756.