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A COMPARISON OF THE QUALITY OF OPERATION THEATRE NOTES WRITTEN BY THE ORTHOPAEDIC RESIDENT AND THE CONSULTANT ORTHOPAEDIC SURGEON
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A COMPARISON OF THE QUALITY OF OPERATION THEATRE NOTES WRITTEN BY THE ORTHOPAEDIC RESIDENT AND THE CONSULTANT ORTHOPAEDIC SURGEON

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ABSTRACT

***Background*: Theatre operation notes are an important documentation that impact on patient care and are a very useful record for clinical research and are a medico-legal requirement.**
***Objective*: To compare the quality of operation theatre notes of the orthopaedic resident and the orthopaedic consultant.**
***Patients and methods*: Operation theatre notes in the orthopaedic unit of Kenyatta National Hospital, over a 6-month period between January 2017 and June 2017 were retrospectively analysed. The guidelines of the Royal College of Surgeons of England (RCSEng) were used to assess the quality of operation notes.**
***Results*: A total of 211 orthopaedic operation notes were reviewed. 187 (87%) of the theatre notes were written by an orthopaedic resident and 24 (13%) cases were written by the consultant. The quality of the operation theatre notes written by both were generally similar. However, the consultant surgeon had better details of operation theatre notes in some aspects especially information involving type of surgery, time, patient name and biodata, name of the operating surgeon and assistant, procedure carried out, patient position, operative findings, prosthesis identification, closure techniques and details of use of tourniquet where there was statistical significance (p value <0.05).**
***Conclusion*: The quality of operation theatre notes written by the orthopaedic resident is generally similar to the consultant orthopaedic surgeon but the consultant notes were better in many aspects. There is thus need for consultant surgeons to train their residents in writing good quality theatre operation notes.**

INTRODUCTION

Operation theatre notes are an important aspect of patient care as well as a medico-legal requirement (1). They also provide data that can be used for research purposes, to either check on effectiveness of surgical techniques and possible modifications that may improve surgical outcomes (2). The Royal College of Surgeons of England (RCSEng) provide guidelines with regards to recording of operation notes (3). There are very few studies comparing the operation theatre notes written by the orthopaedic resident and those written by the orthopaedic consultant. It is presumed that the operation theatre notes written by the consultant are more comprehensive than those written by the resident. This study assessed the quality of operation theatre notes written by the consultant as compared to those written by the resident at the Kenyatta National Hospital. The Royal College of Surgeons of England (RCSEng) operation theatre notes guidelines were used as the reference.

MATERIALS AND METHODS

Operation theatre notes of orthopaedic surgical cases done between January 2017 and June 2017 at Kenyatta National Hospital were retrospectively reviewed. Kenyatta National Hospital is a 2000 bed capacity teaching and referral hospital located about 5km from Nairobi City Centre. It is the main referral hospital in Kenya and serves the greater East and Central African region. Approval to conduct the study was sought from the Kenyatta National Hospital, Ethics and Research Committee (KNH/UoN-ERC). Files of 211 cases of consecutive patients done in various orthopaedic operations were extracted from the Records Department of Kenyatta National Hospital and reviewed by the authors. The objective was to compare the quality of operation theatre notes written by the orthopaedic consultant to those written by the orthopaedic resident. The RCSEng guidelines were used as the reference.

The theatre notes were compared against a checklist that included the following data:

Type of anaesthesia, type of surgery (elective or emergency), pre-operative diagnosis, type of procedure, name of anaesthetist, date, time, patient name, age, sex, name of the operating surgeon, responsible surgeon, name of the assistant, operative procedure carried out, patient position, incision/approach, operative diagnosis, operative findings, intra/peri-operative complications, details of tissue removed, added or altered, identification of prosthesis or implant including material used and serial numbers, details of closure technique, suture used, estimated blood loss, tourniquet use and time, postoperative care instructions, antibiotics, thromboprophylaxis, nurses instruction, legibility, swab/instrument count and signature.

The Statistical Package for Social Science (SPSS) version 22.0 was used to analyze the data. The data was presented as frequencies and percentages. Levene's Test for Equality of Variances was used to calculate differences in the operation notes between orthopaedic residents and consultant orthopaedic surgeons where p value< 0.05 was significant. Names of patients or surgeons were not recorded and instead they were assigned serial numbers.

RESULTS

All the 211 theatre notes were handwritten. 187 (87%) of the theatre notes were written by an orthopaedic resident and 24 (13%) cases were written by the consultant. The quality of the operation theatre notes written by the orthopaedic resident was comparable to the consultant orthopaedic surgeon in some criteria within the checklist. The

consultant surgeon had better details of operation theatre notes in some aspects especially information involving type of surgery, time, patient name and biodata, name of the operating surgeon and assistant, procedure carried out, patient position, operative findings, prosthesis identification, closure techniques and details of use of tourniquet where there was statistical significance (p value <0.05).See Table 1.

Table 1

Percentage of operation theatre notes containing the required information: residents (trainees) versus consultant orthopaedic surgeons including p value

Variable		**Resident (%)**	**Consultant (%)**	**P-value (Significant values in bold italics, p<0.05)**
Type of anaesthesia	Stated Unstated	186 (99%) 1 (1%)	24 (100%) 0 (0%)	0.473
Type of Surgery (Emergency or Elective)	Stated Unstated N/A	147 (79%) 25 (13%) 15 (8%)	18 (75%) 1 (4%) 5 (21%)	*0.014*
Pre-operative diagnosis	Stated Unstated	182 (97%) 5 (3%)	23 (96%) 1 (4%)	0.415
Type of procedure	Stated Unstated	180 (96%) 7 (4%)	23 (96%) 1 (4%)	0.839
Date	Stated Unstated	169 (90%) 18 (10%)	22 (92%) 2 (8%)	0.682
Time	Stated Unstated	40 (21%) 147 (79%)	9 (38%) 15 (62%)	*0.007*
Patient name	Stated Unstated	177 (95%) 10 (5%)	24 (100%) 0 (0%)	*0.015*
Age	Stated Unstated	177 (95%) 10 (5%)	24 (100%) 0 (0%)	*0.015*
Sex	Stated Unstated	177 (95%) 10 (5%)	24 (100%) 0 (0%)	*0.015*
Name of procedure	Stated Unstated	181 (97%) 6 (3%)	24 (100%) 0 (0%)	0.068
Name of the operating surgeon	Stated Unstated	180 (96%) 7 (4%)	24 (100%) 0 (0%)	*0.047*
Responsible surgeon	Stated Unstated	104 (83%) 83 (44%)	24 (100%) 0 (0%)	*0.003*
Name of the assistants	Stated Unstated	165 (88%) 22 (12%)	24 (100%) 0 (0%)	*<0.005*
Operative procedure carried out	Stated Unstated	175 (94%) 12 (6%)	24 (100%) 0 (0%)	*0.007*
Patient position	Stated Unstated	119 (64%) 68 (30%)	18 (75%) 6 (25%)	*0.005*
Incision/Approach	Stated Unstated N/A	158 (84%) 26 (14%) 3 (2%)	22 (92%) 2 (8%) 0 (0%)	0.098
Operative diagnosis	Stated Unstated	66 (35%) 121 (65%)	12 (50%) 12 (50%)	0.135
Operative findings	Stated	130 (70%)	20 (83%)	*0.000*

	Unstated	57 (30%)	4 (17%)	
Intra/peri-operative complications	Stated Unstated	55 (29%) 132 (71%)	8 (33%) 16 (67%)	0.468
Details of tissue removed, added, or altered	Stated Unstated N/A	131 (70%) 51 (27%) 5 (3%)	20 (83%) 4 (17%) 0 (0%)	*0.005*
Identification of prosthesis or implanted material used, and serial numbers	Stated Unstated N/A	121 (65%) 22 (12%) 44 (24%)	19 (79%) 1 (4%) 4 (17%)	*0.005*
Details of closure technique	Stated Unstated N/A	83 (44%) 98 (52%) 6 (3%)	16 (67%) 8 (33%) 0 (0%)	*<0.05*
Suture used	Stated Unstated N/A	84 (45%) 98 (52%) 5 (3%)	11 (46%) 13 (54%) 0 (0%)	0.952
Estimated blood loss	Stated Unstated N/A	45 (24%) 138 (74%) 4 (2%)	7 (29%) 17 (71%) 0 (0%)	0.369
Tourniquet use and time	Stated Unstated N/A	33 (18%) 112 (60%) 42 (22%)	17 (71%) 0 (0%) 7 (29%)	0.108
Postoperative care instructions	Stated Unstated N/A	137 (73%) 49 (26%) 1 (1%)	17 (71%) 6 (25%) 1 (4%)	0.958
Antibiotics	Stated Unstated N/A	155 (83%) 30 (16%) 2 (1%)	21 (88%) 3 (12%) 0 (0%)	0.330
Thromboprophylaxis	Stated Unstated N/A	29 (16%) 155 (83%) 3 (1%)	5 (21%) 17 (71%) 2 (8%)	0.128
Legibility	Stated Unstated	152 (81%) 35 (19%)	22 (92%) 2 (8%)	0.098
Signature	Stated Unstated	179 (96%) 8 (4%)	23 (96%) 1 (4%)	0.960
Swab/Instrument count	Stated Unstated N/A	1 (1%) 185 (98%) 1 (1%)	0 (0%) 24 (100%) 0 (0%)	0.472

DISCUSSION

There are few studies comparing the quality of operation theatre notes written by the orthopaedic surgery trainee and those written by fully qualified consultants. In this study, the consultant surgeon had statistically significant better documentation than the resident in many of the criteria including details of implant serial number and tourniquet use. This contrasts with the study by Baigrie et al (4) in which the operation theatre notes written by the consultant was less detailed than those written by the trainees in almost every criterion. Another Tatenda et al (5) found that handwritten operation theatre notes by the resident surgeons (trainees) were often poor and inadequate.

Generally, good documentation was evident in both groups in many of the criteria especially type of anaesthesia, preoperative

diagnosis, date of surgery, age of patient, sex of patient, name of procedure, name of operating surgeon and operative procedure carried out. This is in keeping with various previous studies. (6, 7, 8)

Inadequate documentation was evident in both groups in some of the criteria especially intra/peri-operative complications encountered, estimated blood loss, sutures used, thromboprophylaxis details and swab/instrument count. This is in keeping with various other previous studies including those by Sweed et al (9).

Use of templates for writing operation theatre notes has been shown to improve their quality (10).

CONCLUSION

The quality of operation theatre notes written by the orthopaedic resident (trainees) is generally comparable to the consultant orthopaedic surgeon. However, there are some details of the operation theatre notes in which the consultant surgeon had statistically better documentation than the resident especially in details of use of tourniquet and recording of implant serial numbers, among others. Use of templates for writing operation theatre notes will help improve their quality.

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