

## **Strategic analysis of the obstetric and gynaecological internship in Sudan**

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### **Abstract:**

**Background:** The high expectations of the increasingly questioning society lays a great burden on the first line treating doctors in Sudan. This is particularly true in the obstetrics and gynaecology departments. The impact of training of the house-officer in surgical departments was not studied before in Sudan.

**The aim:** To evaluate the gains in knowledge and skills of house-officers in the obstetrics and gynaecology departments as reflected by their activities and their opinions.

**Methodology:** A prospective cohort carried in the period from May 2011 through June 2011. The data was collected from 200 house-officers. Their activities and duties as formulated by their seniors and supervisors and gains in knowledge and skills were noted.

**Results:** All house-officers participated actively in the clinical diagnosis (history, physical examination and relevant investigations) and management of cases of antepartum and postpartum haemorrhages. Of them 186(93%) had duties not more than twice a week. However, 121(60.5%) shared training opportunities in units having seven or less peers. Also, 109(54.5%) had regular seminars and tutorials. In practice, 165(82.5%) performed evacuations, 158(79%) participated in normal deliveries, and 110(55%) were assisted in performing caesarean sections.

**Conclusion:** The overall performance of house-officers in the department of obstetrics and gynaecology in Sudan is good. However, standards of training need to be revisited to fill gaps in training if these young doctors are to be dispatched to rural hospital immediately after the internship period.

**Key words:** Internship, preregistration medical graduates duties, house-officers, obstetrics and gynaecology, medical education, and medical responsibility.

**I**n Sudan the maternal mortality was estimated as 509 per 100,000 population<sup>1</sup>. This is the highest in the east Mediterranean region (WHO-EMR). Each maternal mortality; reflects tenfold increase in maternal morbidities. Some of latter are crippling as vesico-vaginal fistula which is prevalent in Sudan in a of about 5000 new cases annually<sup>2</sup>. The Sudan National Strategy was devised to improve the work environment, training and staffing at all levels countrywide. The medical graduates rotate for three months in department of the obstetrics and gynaecology during the preregistration internship period.

After completion of one year internship some of these junior doctors will be sent to work in rural single-doctor hospitals. Hence, they take legal responsibilities in treating patients in rural hospitals. The most serious part of this responsibility is emergency management particularly the obstetrical emergencies. To our best of knowledge, training of the house-officers in this important rotation was not assessed before in Sudan.

**The aim:** To evaluate the gains in knowledge and skills of the preregistration house-officers during the rotation of obstetrics and gynaecology as reflected by their activities and on job training.

### **Methodology:**

**The data collection tool:** A pretested self-administered questionnaire was distributed

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before the House-officers Conference: The Present and Future in the period 22th – 23th July 2011. The questionnaire included the number of peers, registrars and consultants in the obstetric unit. In the academic aspect frequency of the teaching rounds, tutorials and seminars and were noted. To reflect the chances for gaining skills the frequency of the duties, participation in the management of emergency cases such as antepartum and postpartum haemorrhage as well as experience gained in elective and semi-elective operations were added.

**Inclusion criteria:** Junior doctors who have recently completed the internship rotation in obstetrics and gynaecology.

**Exclusion criteria:** The house-officers who were working in their obstetric and gynaecological rotation at the time of distribution of the questionnaires, and doctors who have already decided their future careers were excluded to eliminate the bias in judgement.

**Sample size:** A total of 246 validated questionnaires were distributed to junior doctors who recently completed the training in the obstetric and gynaecological internship. Only 200 completely filled questionnaires were received back. (The response rate 81.3%).

**Statistical analysis:** Data were fed into the Statistical Package of Social Sciences (SPSS) version 17. Means, correlations were computed where appropriate. Significance was taken at  $P = < 0.05$ .

**Results:**

All respondents admitted to have participated in the formal activities in the antenatal care at the referred outpatient clinic, and management in casualty, wards and routine operating days. Nearly half of the respondents were trained in overcrowded units having eight peers or more ( $P 0.0001$ ) as shown in table 1.

A total of 176(88%) house-officers worked under supervision of consultants and registrars, but 24(12%) worked under supervision of consultants only. The number of registrars per unit is plotted table 2.

Table 1: Number of interns in the obstetric and gynaecological per unit

Number of house-officers/ unit	Frequency
1 – 3	32 (16%)
4 – 7	89 (44%)
8 – 11	61 (30%)
> 11	18 (9%)
Total	200(100%)

Table 2: Distribution of registrars in the units where interns trained

Number of registrars/unit	Frequency
Zero	24 (12%)
1 – 2	63 (31.5%)
3 – 5	86 (43%)
> 5	27 (13.5%)
Total	200 (100%)

In addition to the daily routine working hours; the interns used to perform 24-hour duty days that vary in frequency from one hospital to the other as seen in table 3.

**The academic activities:**

There is significant statistical difference in the number of house-officers who had regular rounds seminars and tutorials 91(45.5%) when compared to those who hadn't ( $P 0.0001$ ) as shown in table 4 and 5.

Table 3: The frequency of duties attended by the house-officers

24-hour Duties	House-officers
None	3 (1.5%)
Less than once a week	31 (15.5%)
Once a week	109 (54.5%)
Twice a week	46 (23%)
Three times a week	8 (4%)
More than three times a week	3 (1.5%)
Total	200 (100%)

Table 4: The frequency of seminars and tutorials attended by the interns

Academic activities	Interns
None	91 (45.5%)
Once a week	63 (31.5%)
Twice a week	17 (8.5%)
Three times a week	7 (3.5%)
Four times a week	20 (10%)
> four times a week	2 (1%)
Total	200 (100%)

Table 5: Correlation of the number of house-officers attendance and the regularity of the Bed-Side Teaching Rounds

Number of interns	Teaching Rounds		Total
	None	Regular	
1-3	7	25	32
4-7	21	68	89
8-11	8	53	61
> 11	4	14	18
Total	40	160	200

**The practical clinical skills:**

In addition to the routine activities in the unit, all house-officers had participated actively in the tools used to reach final diagnoses of and follow up of pregnancy. Furthermore, 158(79%) were able to conduct spontaneous vaginal delivery in the labour room (*P* 0.0001) as illustrated in fig 1. Also they participated in the emergency management of cases suffering of antepartum and postpartum haemorrhage (*P* 0.0001) as depicted in fig 2. The house-officers who were able to conduct under supervision dilatation and curettage for cases of inevitable abortion were 165(82.5%) as shown in fig 3 (*P*0.0001). A total of 110 (55%) house-officers were able to perform various numbers of caesarean sections as operators under supervision of consultants or registrars (*P* 0.0001). This is reflected in figure 4.

**Discussion:**

Sudan is being classified as the fourth country having high maternal deaths in Africa. This is because Sudan, like other African countries, is suffering of low medical coverage at rural areas<sup>3</sup>. For this reason after completion of the

internship training some of the interns are then dispatched to single-doctor rural hospitals.

Fig 1: The frequency of houseofficers who attended normal vaginal delivery

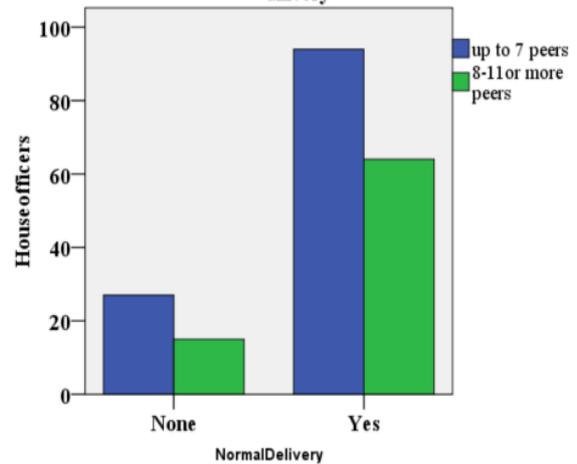
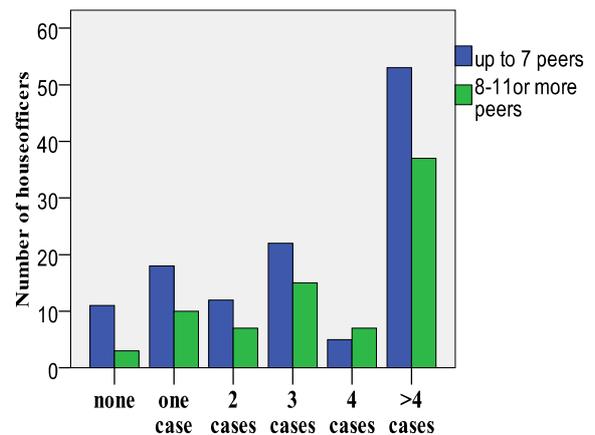
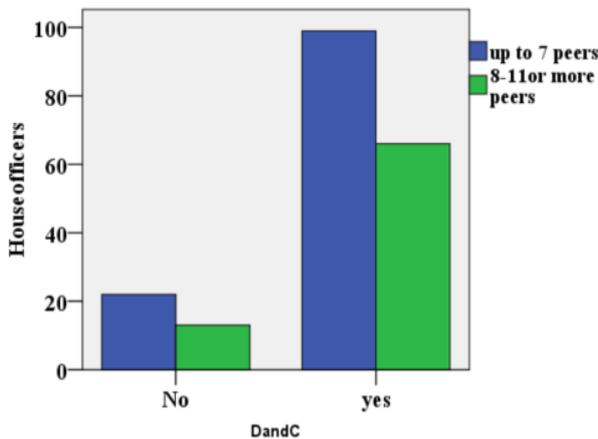


Fig 2: Frequency of management of antepartum and postpartum haemorrhage



In comparing the current situation with rich Arab countries, like Kuwait where each training units had an average of 5 – 6 intern trainees<sup>(4)</sup>, we found that the situation is comparable for 121(61%) of Sudanese house-officers. Nevertheless, 79(39%) Sudanese house-officers trained in crowdedness with more than seven interns / unit. This may apparently reduce the chances for proper training and preparation of the post-registration period. Also, few house-officers; i.e. 24 (12%), worked under direct supervision of consultants only i.e. in absence

Fig 3: Frequency of houseofficers who were able to perform dilatation and curettage



of registrars. This needs to be amended by the Sudan Medical Specialization Board (SMAB) to complete the chain of training system.

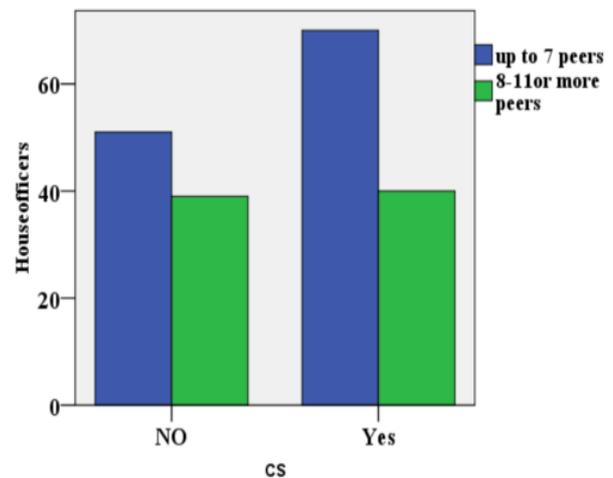
In this study we found that overcrowding did not correlate well with the teaching activities in the obstetrical units (P 0.4480). In other words, the fewer number of house-officers in an obstetrical unit did not reflect regular teaching activities and vice versa. This indicates that programming of the electronic distribution at the Federal Ministry of Health needs to be adjusted with the units' activities rather than the automatic haphazard hospital distribution.

Although the literature from other countries<sup>3-5</sup> cites specific guidelines for the house-officer responsibilities, but there was no clear specifications to tune up the training towards major interventional procedures such as dilatation and curettage and operative procedures. In this aspect, though not specified, the overall performance of the house-officers in Sudan seems to be superior. However, in this study we found that 35(17.7%) house-officers either did not have a chance, were not interested and/or were not supervised carefully to perform dilatation and curettage for bleeding patients suffering of inevitable abortion and 42(21%) did not assist in the normal vaginal delivery of babies. This needs to be rectified for future house-officers through better supervision.

Also, in this study, we found that the number of house-officers does not adversely affect the gains in the academic activities (P 0.01710), the chances for practical skills such as

performance of dilatation and curettage (P 0.07550) and caesarean sections (P0.3180). This could be explained by the facts that the majority of consultants in charge are endogenously motivated and interested in teaching and training. However, in the few units where house-officers did not get the optimum chance for interventional procedures, the explanation could be presence of large number of junior registrars who like to train themselves in the presence of either an uninterested or unenthusiastic interns. Therefore, health planners should strictly consider the detailed reports of the supervising consultants, rather than the results of permanent registration examinations, before sending these young doctors to the hardship areas.

Fig 4: The frequency of caesarean section performed undersupervision by houseofficers



The working hours per week for the house-officers vary in the different hospitals in Sudan. Almost all of the house-officers attended duties during the obstetric and gynaecological training and only 11(5.5%) of house-officers had three or more duties per week i.e. more than 80 working hours per week. The working hours needs to be adjusted with national working hours of the Ministry of Labour and Administrative Reform to prevent medical errors arising from fatigue due to over-work. However, the extra hours spent in work needs to be paid, compensated and rewarded if honesty, justice, advocacy, integrity, truthfulness, empathy and other

features of professionalism are to be exemplified.

Unless house-officers are well trained to developed reasonable capability particularly to deal with clinical emergencies, catastrophes and increasing litigations will be expected. For this reason, we recommend to allow at least one more year of practice as senior house-officer similar to the situation in the state of Ghana<sup>3</sup> and to the foundation training programme in the UK<sup>5</sup> before these young doctors are subjected to the burden of the medical responsibility. This will help preventing the psychological trauma of being sued and prosecuted at such young age.

The Accreditation Council for Graduate Medical Education (ACGME) in the United States limits the maximum working hours to 80 hours per week<sup>6</sup>. In United Kingdom, the hours of duty ranged from 83 to 101 hours/week in 1990s<sup>7</sup>. However, the European Working Time Directive (EWTG) was introduced and applied in UK law in August 1999 reducing the maximum hours worked from an average of 56 to 48 per week<sup>(8)</sup>.

In this study we found that Although 91(45.5%) of house-officers did not attend any seminars or tutorials during the obstetric and gynaecological internship. Local guidelines and protocols of standards should be developed and distributed to regulate the work and structure the working hours for the junior doctors in Sudan. Agreed CME hours should be implemented in a way similar to that of the ACGME in United States<sup>6</sup>.

### **Conclusion:**

The chances for training in obstetrics and gynaecology for house-officers are good as

reflected by their activities and opinions. However, the obstetric and gynaecological internship is in need to set standards in duty hours and academic and clinical activities, to provide doctors with specific competences at the end of the internship. Continuous self-assessment by the interns themselves, as well as their supervisors, and the policy makers reduces differences and gaps in knowledge and skills before these junior doctors are subjected to full range of responsibility in the far district hospitals.

### **Acknowledgement:**

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