

Improving Surgical Skills of OBGYN Residents through Partnership with Rural Hospitals: Experience from Southeast Nigeria

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Abstract

Background: surgical burden of disease is enormous in sub-Saharan Africa where conditions amenable to surgery also contribute to high maternal mortality ratio in the region. Training of specialists in Obstetrics and Gynaecology must include acquisition of requisite surgical skills. **Aim:** To evaluate the impact of clinical rotations at rural hospitals on the clinical knowledge, and surgical and administrative skills of residents in Obstetrics and Gynaecology. **Subjects and Methods:** This was a cross-sectional study using mixed methods involving resident doctors in Obstetrics and Gynaecology at the Federal Teaching Hospital, Abakaliki, Nigeria who had undergone rural postings. Information was obtained from consented residents (June 2013 to February 2015) using a questionnaire and focused group discussion. Data was analyzed using Epi info (CDC, Atlanta USA). **Results:** Thirty-four questionnaires (89.5%) were analyzed; 70.6% were junior residents. Junior residents had a 900% and 460% rise in the rates of emergency and elective caesarean sections they performed, and had similar increases with regard to gynaecological procedures. Senior residents had a 100% and 80% rise in performance of total abdominal hysterectomy and myomectomy respectively. Seventy-five percent of all the residents believed that their surgical skills improved tremendously while 87.5% of the senior residents believed their administrative skills greatly improved also. **Conclusion:** Residents in Obstetrics and Gynaecology at the Federal Teaching Hospital Abakaliki believed that supervised clinical rotations in rural hospitals offered them an opportunity to improve on their clinical knowledge and surgical skills. We advocate an objective assessment of the skills and knowledge of the residents against the claimed subjective improvement.

Keywords: Clinical and surgical skills, Rural posting, Residents

Introduction

Surgical proficiency is one of the requisite expertises to be garnered by a trainee Obstetrician/Gynaecologist before final certification by the Postgraduate medical Colleges operating in Nigeria. Surgical challenges comprise a huge burden of disease in developing countries. More so in obstetrics and gynaecology where prompt surgical intervention may be all that is needed to avert mortality or severe morbidity. In spite of these, developing countries have not paid required attention to the abysmal level of surgical care services within their boundaries.^[1,2] It is well documented that the dearth of trained healthcare manpower is one of the greatest barriers to surgical care services in resource poor populations.^[3] While Africa accounts for almost a quarter of the global disease burden, it harbours only 3% of the global health workforce.^[4] This shortage is even more acute among the specialist cadre which includes Obstetricians and Gynaecologists.^[5,6]

Residency programmes in Nigeria are commissioned to produce specialist cadre workforce and training in obstetrics and gynaecology involves series of theoretical knowledge and practical exposure to live patients for hand-on learning

in the clinics, wards and theatre. The Nigerian public health systems have gone from one crisis to another in recent times, thus weakening the system with a resultant drop in patients' confidence and patronage of the public facilities. Meanwhile the number of residents appears to be on the increase resulting in a mismatch between the number of residents and number of patients available for learning and skill acquisition. This might have been responsible for the apparent drop in skills of graduating residents. The postgraduate medical colleges have voiced this concern and are taking additional steps to stem the drift. Such measures include the introduction of mandatory rural posting rotation within the programme. Such programmes are at their infantile stage in Nigeria and no study has evaluated the impact of rural postings on the skills and knowledge of Obstetrics and Gynaecology residents in Southeast Nigeria. This

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study aims at providing the first review and baseline evaluation of the programme by the residents.

Subjects and Methods

The Federal Teaching Hospital, Abakaliki (FETHA) is accredited by the West African Postgraduate and National Postgraduate Medical Colleges to train junior and senior residents in Obstetrics and Gynaecology. The Training staffs comprise 25 fellows of either or both of the postgraduate medical colleges. The department comprises several units and operates from the main complex of the Teaching hospital. It has 80 bed spaces. Resident doctors rotate through the Labour ward, Emergency, Family Planning, Colposcopy and general Obstetrics/gynaecology postings in the course of their junior residency in addition to external rotations in General surgery, Urology, Neonatology, Radiology and Pathology. In 2013 the hospital entered into an agreement and signed a memorandum of understanding (MoU) with three rural mission hospitals. The terms included sending of residents on rural postings at the centres in order to familiarize themselves with case presentations and management and attendant logistic and administrative challenges in a rural setting. The posting got a boost when the West African College of Surgeons made rural posting mandatory for new trainees in the specialty. Consequently, the department has been sending junior and senior residents to the rural hospitals in batches for a three-month rural rotation. The residents reside within the hospital premises and are embedded within the policies and procedures of the accommodating centre. They are supervised by the consultant staff of the department who also work at those centres on part-time basis. The centres also send in evaluation report on each resident at the end of the posting.

Study population

This comprised junior and senior residents who had undergone rural postings at the mission hospitals namely Mater Misericordiae hospital, Afikpo (MMHA), Mile 4 Hospital, Ishieke (M4H) and St Vincent Hospital, Ndubia (SVH) between the 1st of June 2013 and 28th of February 2015.

Study design

This was a snapshot descriptive survey of residents who had undergone rural rotations using mixed methods. The quantitative arm was a questionnaire based survey which was self-administered by consenting participants. The 13-item questionnaire devised specifically for the study by the investigators and pre-tested on ten residents in family medicine department, evaluated the surgical operations undertaken by the residents, administrative skills acquired and challenges encountered. The questionnaire was distributed in opaque brown envelopes with no identifiers but for the cadre of the resident. They were returned to a research assistant who was not affiliated to FETHA or any of the rural hospitals.

The qualitative arm was accomplished via three sessions of focused group discussion (FGD), two with junior residents and one for the senior residents. The sessions were conducted using a proforma by the 3rd investigator and a research assistant

who were not members of staff of any of the hospitals. The sessions were recorded on a tape recorder and later transcribed. Body languages, emotions and facial expressions were also captured. Each session lasted between 30 to 40 minutes and was undertaken in a comfortable office within the department. There were no inducements to participate.

The study was granted ethical approval by the FETHA committee on Research and Ethics. The quantitative data are presented in simple frequency distribution tables while the ATLAS software was employed in the qualitative analysis.

Results

Thirty-four questionnaires out of the 38 received (89.5%) were analyzed; 26 (76.5%) were junior residents (less than 3 years in the programme). There were five (14.2%) female residents [Table 1]. Junior residents (registrars) had a 900% and 460% rise in the rates of emergency and elective caesarean sections they performed, and had similar increases with regard to gynaecological procedures. Senior residents had a 100% and 80% rise in performance of total abdominal hysterectomy and myomectomy respectively. Seventy-five percent of all the residents believed that their surgical skills improved tremendously while 87.5% of the senior residents (senior registrars) believed their administrative skills greatly improved also. All residents agreed that their surgical and administrative skills as well as clinical knowledge improved to varying degrees as shown in Table 2.

The residents were enthusiastic about the focus group

Table 1: Characteristics of participating residents (Quantitative ARM)

| Parameters | Senior registrars N=8 (%) | Registrars N=26 | Total N=34 |
|--------------------------|------------------------------|--------------------|---------------|
| Years in training | | | |
| <1 | | 2 (7.7) | 2 (5.9) |
| 1-3 | | 18 (69.2) | 18 (52.9) |
| >3 | 8 (100.0) | 6 (23.1) | 14 (41.2) |
| Sex | | | |
| Male | 7 (87.5) | 22 (84.6) | 29 (85.9) |
| Female | 1 (12.5) | 4 (15.4) | 5 (14.1) |

Table 2: Self-reported improvement in skills

| Skill/knowledge | Senior Registrar N=8 (%) | Registrars N=26 (%) | Total N=34 (%) |
|------------------------------|-----------------------------|------------------------|-------------------|
| Surgical skills | | | |
| Nil change | 0 | 0 | 0 |
| Minor improvement | 0 | 0 | 0 |
| Great improvement | 1 (12.5) | 7 (26.9) | 8 (23.5) |
| Tremendous improvement | 7 (87.5) | 19 (73.1) | 26 (76.5) |
| Clinical knowledge | | | |
| Nil change | 0 | 0 | 0 |
| Minor improvement | 2 (25.0) | 2 (7.7) | 4 (11.8) |
| Great improvement | 5 (62.5) | 18 (69.2) | 23 (67.6) |
| Tremendous improvement | 1 (12.5) | 6 (23.1) | 7 (20.6) |
| Administrative skills | | | |
| Nil change | 0 | 0 | 0 |
| Minor improvement | 0 | 5 (19.2) | 5 (14.7) |
| Great improvement | 1 (12.5) | 21 (80.8) | 22 (64.7) |
| Tremendous improvement | 7 (87.5) | 0 | 7 (20.6) |

discussions. Ten and nine junior residents took part in the two sessions for their cadre while eight senior residents were involved in theirs. The third investigator anchored the sessions while the research assistant took notes and recorded the proceedings. Three themes stood out from the discussions and they included skill acquisition, administrative knowledge and challenges to the programme.’

Skill acquisition

The faces of the residents lit up as they revelled in their newly acquired or improved skills in some obstetric and/or gynaecological surgeries. This according to some junior residents was the highlight of the posting and they really appreciated it. The junior residents under the guidance of the senior resident were allowed to perform Caesarean sections which hitherto they were not permitted to do at FETHA. The availability of cases was also exciting to them.

“Do you know? I performed about 37 sections within this period (that’s eh!! - local expression of excitement and emphasis). How can I have dreamt of that at FETHA?”

Besides the numbers, they also narrated that their skills have also improved from repeated performance under direct supervision.

“I assisted (at surgery) initially and later was able to perform with the senior registrar assisting. Now I can and do perform alone perfectly with any other doctor assisting me. This indeed is a very good thing”

For the senior residents, they were able to perform myomectomies and hysterectomies under minimal guidance and believed they could perform same without further supervision. Talking about his experience on total abdominal hysterectomy, one resident said thus:

“I was able to operate on one side while the Chief performed the other; I did this severally, just that Chief never allowed me go alone but I am so sure I can do it alone if the opportunity comes....”

“.....even more exciting was that I am allowed to take certain decisions for complicated management and surgeries and only inform the consultant. In almost all cases, he agreed with my management decisions. Another important thing was that I was able to teach and direct the junior residents with me and I am sure I contributed so much to improving their surgical skills”.

Administrative skills

The senior residents mostly referred to gains in administrative skills from the rotation. They had a free rein to organise the maternity section of the hospital, preparing workable duty roster and assigning duties to other staff. At one of the hospitals (SVH), a particular resident was able to bring about a policy change with the introduction of weekly clinical reviews. At the same hospital, resuscitation of the labour ward theatre was advocated and was still in the process at the time of this survey. He said

“I felt like the chief resident at FETHA dishing out instructions

and I am so happy, my instructions worked and patients were the primary gainers. I am also happy that my input was appreciated by the Father (A Catholic priest who was the administrator of the hospital),”

Challenges

The change in mien when this was brought up for discussion was evident. Initially there was palpable tension and suppressed voices to speak to this. Later these gave way to frank discussion.

The parent department was heavily criticised for adopting reports from rural hospitals and acting on them without painstaking investigations to ascertain the truth. This really bothered most of the junior residents who felt that their emotions and opinions did not ever matter.

“the painful thing was that the department did not even ask about what happened before the was withdrawn from the posting based on what they wrote”

They also lamented the seemingly tensed atmosphere surrounding the posting

“It’s like we are being policed, with threats of sack or disciplinary measures from the department.....”

However, the main challenges seemed to lie with the rural hospitals. The residents felt they were not treated fairly by the hospitals, were over worked and due attention was not given to their welfare.

“it was difficult to feed at times, we left our family back at Abakaliki only to come here without adequate arrangement for feeding, this is appalling. Look at the accommodation provided, it is nothing to write home about, the frontage is overgrown with weeds and I even saw a snake drop down from the ceiling one day....”

More disturbing to the residents was the apparent confusion about their role in the hospitals. At some instances they were meant to manage other patients in other specialties other than Obstetrics and Gynaecology. Furthermore, they found it difficult to work with lower cadre staff such as community health extension workers (CHEWs) who formed the majority of the nursing staff in some of the hospitals.

“...some of these CHEWs are not trained and do not understand or carry out simple instructions”

They however went ahead to make suggestions to strengthen the rotations and make them more rewarding. These measures included: signing and interpretation of a detailed MoU with the hospitals stipulating their roles, privileges and benefits, improvement in their welfare package including payment of rural allowances by the Teaching Hospital, and creation of a more relaxed relationship with the parent department at FETHA.

Discussion

Surgical care can be life-saving and cost-effective in many

dire obstetric and gynaecological conditions in developing countries. Unfortunately, it appears largely neglected in such countries.^[1] Short supply of trained surgeons is a documented problem militating against access to surgical care. Training of surgeons must therefore form part of the overall solution and this is one of the details of the postgraduate medical colleges operating in Nigeria. Mission hospitals in the rural areas of the developing countries mainly offer humanitarian services but are also known to offer quality surgical care.^[7] The Bellagio Essential Surgery Group^[8], a multidisciplinary consortium has been in the fore front of canvassing for increased access to surgical care in Africa while the World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care^[9], another multidisciplinary group aims at reducing death and disability in injuries and pregnancy-related complications amongst others. The effort of FETHA, a training centre for the postgraduate medical colleges is therefore a step in the right direction to produce quality specialists with requisite surgical and managerial skills to reduce adverse maternal outcomes and also the surgical burden of disease.

This study has revealed the opportunity afforded resident doctors to acquire and refine their surgical skills in the rural mission hospitals. This is important considering the hierarchical organization of residency training programmes in Nigeria and the competition that exists which limit the surgical exposure of junior residents which has a negative impact on their training. The meteorological rise in the number of elective and emergency Caesarean sections performed by the junior residents speaks to this. This ultimately bears on their expertise to deal with obstetric emergencies and save lives when faced with such situations. Emergency caesarean section forms a component of comprehensive emergency obstetrics care (EMOC) which can be paramount in reducing maternal morbidity and mortality.^[10] The same argument goes for the increased level of skill acquired by senior residents in major gynaecological operations, these go a long way in reducing the surgical disease burden of women. The pivotal role of this partnership between the tertiary training centre and the rural mission cannot be overemphasized. However, an independent evaluation of the residents' proficiency of these skills would form a subject of another survey.

The subjective boost in managerial and administrative acumen of the residents is also worthwhile and can be of value in their future practices. Undergraduate and postgraduate medical curricula have been criticized at various fora for deficiency with regards to administrative/managerial content. This partnership when refined with a more robust input in the administrative skill acquisition will yield better value. In an earlier publication the administrative changes in one of the rural hospital occasioned by the resident yielded positive results in the hospital.^[11]

There is need to strengthen the programme to make it more effective as it may serve a lasting solution to the limited surgical exposure of trainees at the big teaching hospitals. the qualitative survey highlighted the areas of weakness to include disposition of the parent department, disposition of the rural hospitals, challenges with welfare issues and logistics in the centres. These individual nuances need further critical

evaluations to inform comprehensive and integrated solution. In the short run, we advocate a tripartite meeting between the department of Obstetrics and Gynaecology (FETHA), the rural mission hospitals and the residents to discuss in open terms, the provisions and prescriptions of the memorandum of understanding with possible review as well as re focus the residents on the foundational intent and aim of the programme. The welfare and comfort of the residents must also be discussed and enhanced.

This paper draws its strength from the robust methodology which combined both quantitative and qualitative data to draw conclusions. However, most of the data were subjective and were not subjected to independent evaluation or authentication. The questionnaire employed though pretested was not a validated instrument. It however provides another opportunity for another research using a better formulated and robust methodology.

Conclusion

Partnership between the Federal Teaching Hospital Abakaliki and the rural mission hospitals has impacted positively on the surgical skills, administrative acumen of both junior and senior residents in obstetrics and gynaecology. This arrangement speaks effectively to the current deficiency in training where residents are restricted to the training centre alone and is a bold move to increasing the availability of trained surgeons in sub Saharan Africa to combat maternal mortality amenable to surgical intervention as well as reduce the surgical burden of disease afflicting women in sub Saharan Africa. There is need to assess these subjective results to further evaluation to ensure objectivity in such a way that it can be scaled up nationwide.

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Conflict of Interest

All the authors except the third are all Consultant Staff members of the department of Obstetrics and Gynaecology of the Federal Teaching Hospital, Abakaliki. The first author is also the Head of department (OBGYN) and postgraduate training unit of the same institution. The last author was the Chief Medical Director who uninitiated the programme.

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