Improving Recruitment of surgical trainees and Training of Surgeons in Uganda

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Background: The surgical work output in Uganda is qualitatively and quantitatively inadequate. The number of surgeons is estimated at 100 for a population of over 26 million Ugandans. This paper reports on how to improve recruitment of surgical trainees and training of surgeons in Uganda, focusing on perceptions of potential trainees, trainers, and medical administrators.
Methods: This was cross sectional, descriptive study sampled at least 50% of each of the relevant category of interviewees. Self-administered questionnaire and focus group discussions were used to collect data, which was analyzed manually using a master sheet. It was approved by the Ethics and Research Committee.
Results: Paediatrics and Public Health were rated as the disciplines of choice for postgraduate training in Uganda. The reasons why potential trainees would shy away from specialized surgical training were excessive workload, risk of catching HIV/AIDS, low financial returns and a poor learning environment. The major bottlenecks in surgical training, which were cited, included inadequate number of scholarships, inadequate supervision by trainers, inadequate facilities and poor work conditions for trainers.
Conclusion: The remedies to this complex problem revolve round providing more resources, (human, materials, money), improving supervision by the trainers, advocacy for an evidence based curriculum content and availing more funding into the Medical Education sector to improve Human Resource for Health development.

Introduction

The Health workforce in Africa is grossly insufficient and poses a major workforce crisis[1,2]. The crisis includes lack of well-trained health professionals in the area of Surgery, under investment in the area of surgery does not help matters much because surgical conditions are unfortunately not seen as a public health threat and a general failure to recognize the importance of surgical care in the developing world[3]. The development of the health sector workforce in low-income countries has suffered from years of national and international neglect. This has become more apparent as new resources are being mobilized to fight HIV/AIDS, Tuberculosis (TB), Malaria and other diseases.

Surgical conditions as a public health threat have been masked by HIV/AIDS, TB, Malaria, Acute Respiratory Infections (ARI), and diarrhoeal diseases among others. Lack of political commitment by governments and international agencies may be the single most important reason why surgical care has not progressed in developing countries. Surgery is considered to be too expensive as a treatment modality for the developing world[4]. Prompt and appropriate surgical care for many conditions such as trauma and hernia significantly reduces morbidity and mortality and can be a very powerful tool for poverty eradication.

Surgical training is long and tedious. The workload is enormous and the pay is not so attractive in low resource settings. This could impact on the intake of surgical trainees. The surgical training for undergraduate medical students is not sufficient to enable the newly them once qualified to handle the challenges and workload that awaits them as general doctors. Over all, the surgical work out put is generally low in Uganda and East Africa. The personnel doing the work are not sufficiently equipped to do it, and what they do is qualitatively and quantitatively inadequate[5, 6, 7]. There is need for developing countries to revise general surgical training as a way of responding positively to the critical situation of low resources and low manpower[8, 9]. The aim of this study was to investigate factors affecting recruitment and training in surgery at Makerere University.

Methods

This study took place at the Faculty of Medicine, Makerere University, Uganda. It was a cross sectional descriptive study. Self-administered questionnaires were used to gather information from intern doctors, Postgraduate surgical trainees, qualified surgeons and medical administrators. Focus group discussions were held for randomly selected members in each of the above categories save for the medical administrators after the questionnaires. The sample size was at least 50% for each category and included 25 of the 40 interns in Mulago national referral Hospital, rotating in the 4 major disciplines of Obstetrics and Gynaecology, Paediatrics, Medicine and Surgery, 9 out of 11 first year surgical trainees, 15 of the 17 second years and 6 out of 11 the 3rd year trainees. The issues addressed were the same in the questionnaires and focus group discussions. The data collected was analyzed manually. The study was approved by the Faculty Ethical and Research Committee (FERC).

Results

Perceptions of potential trainees (Intern doctors)

Twenty-one interns out of targeted twenty-five returned the self-administered questionnaires. For the second and third trainees, fifteen out of seventeen participated in the focus group discussion and filled in the self-administered questionnaires.

Reasons for not choosing surgery as expressed by the potential surgical trainees included the high risk of acquiring HIV infection during clinical practice, the relatively heavy workload during training (academic workload and service workload) and the notion that surgery had limited career paths opportunities in the Makerere university and Mulago-Uganda setting when once one qualifies as a surgeon. Surgery was considered to be largely curative, does not lend itself to large scale preventive interventions, for that matter it does not attract large funding and attention (media, donors and governments); it is a poorly funded discipline relative to Paediatrics, Public Health, Medicine and Obstetrics and Gynaecology. Compared to other disciplines of medicine, in surgery there is less research activities which makes it less attractive for the research orientated or research aspiring individuals.

The potential trainees suggested the following as means of improving recruitment:

- There is need to pay trainees better, the current packages are seen as grossly in inadequate.
- There is need to provide more scholarships to have more trainees enrolled.
- There is need to encourage more research activities in the department of surgery,
- Set more realistic assessment modalities that are in line with what happens in the workplace, the assessment should be in line with the set learning objectives.
- Revise curriculum to evidence based one so as to better prepare undergraduates for the work in the field.

Perceptions of current trainees (Post graduate students)

Ten out of fifteen first year trainees, the participants were engaged in a focus group discussion. The first year trainees gave the following as their reasons for having chosen surgery:

- They had keen interest, a general liking for surgery.
- Inspiration and encouragement from seniors and colleagues.
- The need to earn more money and thought surgery would provide that opportunity.
- The job satisfaction that comes with surgery being a practical discipline and more often than not the results are prompt and there for everyone to see,
- The high demand for surgeons in the country.

Only 3 Out of the 11 were satisfied with the current training as it was.

To improve on intake of students, they suggested that:

- Improve access to scholarships.
- Redesigning curriculum to cover more content but also improve relevance of content to field challenges.
- Increase on early clinical exposure starting in the first year. Currently the first year of the M.Med Program is spent studying Biomedical Sciences with little Clinical experience until the second year of study when they come to the wards.
- Improve the learning and teaching environment.

Table 1 gives a summary of the rating by trainees of the different aspects of the surgical training program.

Weakness of current surgical training programme

- Inadequate supervision of especially the practical work sessions. The trainees many times work in the absence of a more senior person.
- Poor support by teachers, there isn't as much guidance at work place and especially dissertation work.
- Intimidating learning environment. Some seniors look unapproachable,
- Inadequate ICT and library facilities. There is need for unlimited access to the internet with good speed and access to journals.
- Unsatisfactory assessment methods, the bulk of day today work are not assessed.
- Little guidance on topic selection for the dissertation and poor research (dissertation) support.

The recommendations by trainees on how to the Surgical Training Programme at Makerere University are improve summarized in Table 2.

Perception of qualified surgeons

Twenty randomly selected surgeons out of forty-five in the Department, filled in a self-administered questionnaire which was qualitatively analyzed, manually from a master sheet. Factors deterring recruitment of trainees for surgical training as perceived by the qualified surgeons were

- Poor prior surgical skills and fear of not living up to expectations. Level of skills, required before joining training is very high and this could be a deterrent.
- Disappointing status quo. There is inadequate learning and teaching facilities, inadequate theatre supplies and equipment.
- Inadequate funding support for research projects in surgery at Makerere University.
- Fear of risk of infection with HIV and Hepatitis during operations despite availability of protective gear is real.
- Relatively little pay with loads of work that is stressful work for body, soul and spirit during and after training.

Table 1. Rating of Different Aspects of Surgical Training Programme Using a 5-Point Liker Scale

PARAMETER	EXCELLENT	VERY GOOD	GOOD	AVERAGE	BELOW AVERAGE
Process	3	-	7	5	-
Content	4	5	5	-	1
Assessment	-	4	8	-	3
Supervision	-	2	1	8	4
Teacher Support	1	-	6	4	3
Student Support	4	5	5	1	-
Administration	-	1	6	2	6

- Process = Overall mechanisms of the program, processes of getting into the program the application process the work and reading schedules.
- Content = Theoretical and practical components of the curriculum.
- Assessment = Both summative and formative assessments
- Supervision = Senior's presence during practical work session especially in the operating room (including demonstrations), outpatient clinics and inpatient ward rounds.
- Teacher support = Mentoring and guidance in general.
- Student support = Teamwork and general support from fellow students.
- Administration = Timely salaries, accommodation relevant and timely information and general troubleshooting.

Table 2. Recommendations by Trainees.

SUPERVISION IMPROVE SUPERVISION OF TRAINEES' CLINICAL WORK BY SIGNIFICANTLY INCREASING CONTACT HOURS WITH TEACHERS WHILE ON THE JOB, BY DETAILED SCHEDULING (TIMETABLE) AND CLEARLY DEFINED LEARNING OBJECTIVE AND INVESTIGATE THE CAUSE OF INADEQUATE SUPERVISION AND DEAL WITH CAUSES.
Teacher Support Better guidance needed for dissertation work, Provide timely, regular and appropriate feed back from teachers, Teachers should be friendly and approachable.
From fellow students support enhance Better teamwork by teaching principles and practice of team work and Encourage exchange programs with other schools within and without Uganda
Administration support Regular meetings to sort out salaries, accommodation and related issues and have students represented.
Process (mechanics of the programme) Provide a practical framework that allows adequate workload for quality exposure, practice and adequate reading time. Need for a clear and detailed curriculum with objectives and content outline. Improve learning resources include unlimited access to the internet with good browsing speeds and more visual Aids. Incorporate Problem Based Learning (PBL) and teaching and learning methodology in the curriculum. Encourage exchange programs with other schools. There is a need to focus on confidence building and decision making for trainees Comprehensive pre-entry assessment and have criteria to all potential applicants would be a good idea
The content Encouraged improved on research activities in the department of surgery have evidence based curriculum content. Developing content that reflects what there is in the work place, with emphasis on priorities needs or conditions. Include 'How to Teach' how adults learn Module for postgraduates Teach team work
Student Assessment - Should assess what is stipulated in the Curriculum, - Include daily work activities, operations outpatient clinic work, elective surgery and teaching as part of progressive assessment, - Progressive assessment should contribute more to the final mark 70% is recommended.

- Inspiring mentors and role models may not be readily available. Relatively little pay with loads of work that is stressful work for body, soul and spirit during and after training.
- Inspiring mentors and role models may not be readily available

Views on gaps in training

The following views were seen as gaps by the surgeons.

- Unfavourable work environment, inadequate supplies and equipment to

work operating lists, limits complexity of procedures done.
- The limitations of the diagnostic departments (radiology laboratory) contributes to the lack of in-depth assessment and investigations,
- A severe shortage of anaesthetist contributes to incompletion of scheduled and planned operation lists and therefore low work output i.e. no of operations done,
- The Radiology and laboratories sometimes lack required supplies.
- Workload reduces time available for teaching students. In some areas the curriculum out of step with reality not evidence based.
- Poor assessment methods, the emphasis is on summative examinations. The daily learning activities that should form the formative assessment are rarely assessed.
- Scarcity of teaching staff in general and in sub specialities in particular.

Recommendations by surgeons to improve status quo
- Mobilize funding for equipment and other learning resources.
- Improve policy on Human Resource Development – in the fields of recruiting, retaining and training. Makerere University requirement of a PhD to be appointed a lecturer should be dropped in the case of the medical school particularly in the clinical departments.
- Improve equipment, scope and quantity the teaching hospital, equip and maintain clinics, wards, theatres, radiology laboratories and the ICU.
- Avail scholarships in numbers that tally with the demand by students, staff and Ministry of Health
- Better remuneration for trainers and trainees may improve work morale.
- Develop/support side laboratories and imaging to be available 24-7 especially for emergency wards/units.
- Curriculum revision should incorporate appropriate teaching and learning methods. Emphasize should be on what is relevant to the workplace realities/priorities.
- Train surgeons how to teach.
- Decongest Mulago Teaching Hospital, so that there is less stress on supplies and equipment.
- Improve learning environment and make it user friendly.
- Collaborate with other universities /schools in service.

Key Informants (Teaching, Research, Fundraising and Medical administrators)

Process

There are many unmet needs for the teachers in the faculty to make the process of learning for the students meaningful. These are leadership skills, managing staff, in-depth training in assessment methodologies and skills, curriculum development and evaluation and student counselling.

Content

Need a curriculum review. At least after every five years to keep improving it as new evidence emerges from researches and informants (policy makers) as to what the priorities are.

Assessment

Shift emphasis to progressive assessment, adopt new methods like OSCE (OSATS) (Objective Structured Clinical Examination)

Teacher support and supervision

Most teachers are not trained to teach. They learn by apprenticeship and there is need to incorporate this in training and staff development.

Staff Support

Redefine mentors' role and assign mentors earlier rather than later. Roles of mentor include helping out in dissertation writing.

Administration

A help desk for postgraduate students. Lobby government to pay more (high salaries) and levy fees from private students. Write proposals for Grants to support learning activities. Most of this money would be donor funds. There is under investment in education by government at the moment.

Discussion

An international meeting on Human Resources for Health in Cape Town in September 2004 highlighted, the need for an urgent action to deal with the crisis of low numbers of trained personnel for health, requiring a concerted action of countries and all development partners. Surgical Training is severely constrained by under investment resulting in a shortage of almost all the facilities, infrastructure, beds and equipment. This situation is further compounded by extremely low numbers of trained personnel.

Though this research focused on what could be done at a departmental level at the Faculty of Medicine, Makerere University to address Surgical Training Programs and the issue of shortages of trainee surgeons in Uganda, the solutions and efforts to effect, desirable change are also at two other levels; nationally at the Ministry of Health, Ministry of Education and globally with key players such as WHO, World Bank and IMF.

Supervision

The critical areas highlighted are supervision and teacher support. Training in the tropics has enormous opportunities for hands on training and experience. There is a diversity of pathologies with opportunity to learn improvisation and adaptive skills. However, all this could be negated by inadequate supervision and demonstration of proper skills by the teacher to the student[10].

The trainers are few and overloaded with work. They are underpaid and poorly motivated and work in an environment that is inadequately equipped. The recommendations are possibly obvious to everyone:

- Increase teaching staff numbers,
- Decongest teaching hospitals by strengthening and activating peripheral centres,
- Pay better salaries,
- Train more but exactly how this is done in the context of very limited training budgets, in low resourced countries is the question.

To realize these recommendations a high level of commitment from the highest political authorities is essential[4].

- Should training institutions be privatized so that students pay what it takes and consequently schools acquire better facilities and pay teachers better?
- Should medical training institutions be funded preferentially from central governments and Ministries of Health or should we push for debt cancellation so that there is more money available for everything including Education and Health?

The teachers too should lobby the politicians more vigorously in order to realize a high level of political commitment and the funding that is likely to come with it.

What would get teachers to find more time to supervise trainees? Teachers are generally paid inadequate salaries and they have to find other work (dual practice) to make ends meet reflecting the inability of Education and Health Ministries to ensure adequate salaries and favourable working conditions[11]. Does dual practice take away time and effort that should be spent supervising training activities?[12] Competition for time is a nagging problem for many development agencies and Ministries of Health. There are simply too many meetings and workshops to attend[13] in addition to private practice.

Possibly trainees following teachers in their private practice for demonstration of patient handling skills and surgical skills could be a solution? Would formalizing dual practice generate a new commitment for teaching and supervision? Pretending that the problem does not exist or that it is a question merely of individual ethics or approaching it as a problem of corruption does not do justice to its complex nature and will not make it go away[11]. The earlier such an issue is comprehensively investigated and decisively dealt with the better.

Preparation for teaching

The role of a Medical teacher is increasingly being recognized as a core professional activity for all doctors. Graduates must understand the principles of education as they are applied to Medicine. They must recognize the obligation to teach colleague. They must understand the importance of audit and appraisal in identifying learning needs for themselves and their colleagues.[15,16,17]

Medical schools should incorporate teaching and learning modules in both undergraduate and post graduate courses. Onsite training is also a good approach for those already in the business of teaching.

Better pay

A widely advocated strategy for Human Resource for Health is to lobby government to appreciate the situational uniqueness of the workforce in Africa and remunerate it preferentially but this is faced with challenges. In the average low-income country, salaries would have to be multiplied by at least a factor of five to bring them to the level of the income from a small private practice [13,14].

One of the ways worth exploring is the controversial question of introducing user fees, as a source of extra funding for health [18,19,20]. Some of these funds would be paid to professionals who see patients and also teach. That user fees concept could be extended to increase the number of paying students (private students).

Better facilities

It makes no sense to expect teachers to perform well in circumstances where the equipment and resources are patently deficient. Improving working conditions involves more than providing an adequate salary and right equipment; it also means developing career prospects, training and timely promotions.

The Curriculum

The idea of having evidence based curriculum content entails findings out what conditions a health worker is likely to confront on a daily basis and train for that. The concept of defining core curriculum; must know, the nice to know and good to know follow. What is taught should be mostly a reflection of what is in the workplace.

Conclusion

In order to accomplish the above there is need for better use of available resources. This however is not enough to achieve substantial improvement. More funding is required to recruit more trainees and therefore have more surgeons and surgeons that will stay. But as that happens we need more and better-equipped teachers. The realization of this requires strong commitment from all major players, preceded by strong advocacy and lobbying.

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