Trends in staffing an academic department of surgery in a tropical hospital: past, present, any future?

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Abstract

Objective—To evaluate the effect of staff mobility on student teaching, the training of young surgeons, and the volume of research in an academic department of surgery of a tropical teaching hospital.

Design—Retrospective study of academic staffing in the department of surgery of the Ahmadu Bello University Teaching Hospital between 1975 and 1993.

***Setting*—Zaria, Nigeria.**

Subjects—42 academic staff, 1190 medical students, and 110 registrars (trainee surgeons).

***Main outcome measures*—Number of academic staff in post, medical students, and registrars; number of research papers in latter years of the study.**

***Results*—In 19 years, 42 academic staff worked for varying periods (1-15 years) in the university department of surgery in Zaria. These included six professors, 12 senior lecturers, and 24 lecturers. Although staff numbers diminished, numbers of students and registrars increased year by year. Average number of publications dropped from a peak of 14.4 to 7.4 a year.**

***Conclusion*—Staffing of the department has fallen steadily over the years and has adversely affected the department's primary responsibility of teaching students and training young surgeons.**

Introduction

Over the past 40 years academic medical centres all over the world have come under intense scrutiny and increasing stress. In the United States and the United Kingdom these stresses have long been recognised and have been examined in many reports.[1-5] They include the running costs of these institutions, their employment of high level staff, and the need to acquire and use sophisticated diagnostic facilities. Situated in urban areas, medical centres are responsible, directly or indirectly, for the underutilisation of well equipped rural health facilities—which in the United States and United Kingdom constitute 60-80% of all health care facilities. The cost of running medical academic programmes is also escalating. These stresses not only undermine the level of performance but threaten the survival of many medical schools and academic medical centres.[1 6]

Not one African country has truly met the minimum funding for health care delivery recommended by the World Health Organisation.[7] The ratio of academic medical centres to rural health facilities in Nigeria approximates those of United States and the United Kingdom. It is not surprising, therefore, that our academic centres are stressed by the large numbers of health facilities to be funded.

In Nigeria a tertiary health facility funded by the federal government is usually affiliated to a university. The academic department of any specialty is the responsibility of the federal ministry of education; through the university it provides most of the teaching staff, medical students, and other educational facilities. The teaching hospital provides the surgical service and some service staff and equipment and is the responsibility of the federal ministry of health. It is also responsible for postgraduate medical education.

In the university system, the staff of any medical department of surgery primarily provide teaching at undergraduate and postgraduate levels; in addition, they conduct research and provide academic leadership to junior faculty. Such staff also provide surgical services to the teaching hospital and the community.

Recently many developing countries have experienced a rapid turnover of academic staff in tertiary health and educational institutions. This trend is noticeable in the academic department of surgery of Ahmadu Bello University, Zaria. This study appraises the situation and its effects on learning, research, and by extension the quality of patient care that was, is, and will be offered.

Subjects and methods

The information contained in this study was obtained from the department's records of all academic and non-academic medical staff and undergraduate and postgraduate students from the 1975-6 academic year to the 1992-3 academic year (October to October). Data for ratios of staff to undergraduates were compared with the guidelines of the National Universities Commission[8] and those of registrars and hospital beds with guidelines of the National Postgraduate Medical College[9] and the West African College of Surgeons[10]. The data obtained from the departmental records were also studied to find the effect of these ratios on the quality of undergraduate instruction, training of registrars, and research, and on staff development and continuing education, and by extension patient care.

Academic staff of the department of surgery are primarily lecturers to the undergraduate clinical medical students; they are expected to engage in research. Academic staff of the clinical disciplines at the rank of full lecturer and above are appointed honorary consultants to (and by) the hospital, which in turn is responsible to the National and the West African colleges of surgeons for running residency (registrar) programmes.[9 10] The consultants thus offer service to the patients and supervisory tutelage to the registrars. The undergraduate programme covers five or six years, of which the last three years are spent in the clinical departments. The stated minimum for the residency programme is four years. The department of surgery caters for 200 beds (a sixth of beds in the hospital), excluding obstetrics and gynaecology and orthopaedic, maxillofacial, and ophthalmic surgery.

The guidelines of the National Universities Commission, the regulating body for university education in Nigeria, stipulate that 20% of staff in a department shall

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Table 1—*Number of staff, registrars, and students, academic department of surgery, Ahmadu Bello University*

Session	Academic staff						Registrars (senior registrars)	Final year students
	Total	Professors	Readers	Senior lecturers	Lecturers	Assistant lecturers		
1975-76	12	2	1	5	4	0	9 (0)	46
1976-77	12	2	2	4	4	0	7 (1)	51
1977-78	11	1	2	6	2	0	15 (3)	59
1978-79	10	1	2	6	1	0	12 (4)	78
1979-80	11	1	4	5	1	0	13 (3)	100
1980-81	8	1	3	4	1	0	14 (4)	63
1981-82	11	3	2	4	2	0	18 (2)	39
1982-83	8	2	1	2	3	0	18 (3)	60
1983-84	9	3	1	2	3	0	20 (4)	59
1984-85	8	2	2	2	2	0	13 (5)	59
1985-86	8	3	1	1	3	0	15 (8)	64
1986-87	7	1	1	1	4	0	15 (5)	71
1987-88	8	1	0	1	6	0	17 (6)	61
1988-89	6	1	0	2	3	0	22 (6)	78
1989-90	4	0	0	2	2	3	24 (5)	82
1990-91	3	0	0	3	0	5	25 (6)	73
1991-92	4	0	1	2	1	8	25 (6)	57
1992-93	5	1	1	2	1	8	23 (5)	68

Table 2—*Ratio of staff to undergraduate students and to registrars, Ahmadu Bello University*

Session	Staff:student ratio	Staff:registrar ratio
1975-76	1:4	1:1
1976-77	1:4	2:1
1977-78	1:6	1:2
1978-79	1:8	1:1
1979-80	1:0	1:1
1980-81	1:8	1:2
1981-82	1:6	1:2
1982-83	1:8	1:2
1983-84	1:7	1:2
1984-85	1:7	1:2
1985-86	1:8	1:2
1986-87	1:10	1:2
1988-89	1:13	1:4
1989-90	1:21	1:7
1990-91	1:24	1:10
1991-92	1:14	1:6
1992-93	1:14	1:6

be of the rank of professor or associate professor, 25% of the rank of senior lecturer, and 55% of lecturers and assistant lecturers.[8] The guidelines also state that any medical education facility shall have a ratio of one staff member to 15 undergraduate students. The postgraduate colleges of surgery's recommendation for training programmes is one consultant to 12 beds and one consultant to six residents.

Results

Table 1 shows numbers of staff, registrars, and students. In the 1975-6 academic year, one of the professors of surgery (the head of department) was a paediatric surgeon with general surgical interests and the other was an orthopaedic surgeon. The reader (associate professor) was a burns and plastic surgeon; the five senior lecturers consisted of a gastroenterologist, a thoracic surgeon, a paediatric surgeon, and two general surgeons. In that year there were 12 academic staff of various grades and nine registrars. Staff rose to senior placements from within the department. Numbers of academic staff decreased steadily up to 1990-1, when only three staff, all senior lecturers, were in post.

Forty two academic surgeons passed through the department between 1975 and 1993: 10 general surgeons; 12 maxillofacial or dental surgeons; four paediatric surgeons; three each of urologic, orthopaedic, and gastroenterological surgeons; two ophthalmic surgeons; two burns and plastic surgeons; and an otolaryngology surgeon, a thoracic surgeon, and a neurosurgeon. In 1979-80 the maxillofacial, orthopaedic, and ophthalmic units became autonomous departments. Between 1978 and 1988 the only thoracic surgeon, two gastroenterologists, one burns and plastic surgeon, one neurosurgeon, three paediatric surgeons, and a host of general surgeons left the department. Of the 14 registrars who were eligible for appointment as staff, seven stayed behind for short tours and the rest left as soon as they had completed the programme. By 1992-3 only three of these registrars were still in post, two of whom had additional administrative responsibilities.

Table 2 shows that the yearly staff:student ratio was within acceptable limits overall. In 1989-90 and 1990-1 the number of students rapidly outstripped the number of staff in post.

Table 3 shows the number of students from the department who passed the various stages of the Colleges of Surgeons' examinations. Though results have been encouraging, out of 110 candidates only 14 have qualified as academic staff.

Members of the department published an average of 9.5 papers a year. This peaked between 1978 and 1982 at 14.4 publications a year, but after 1989 dropped to 7.4 a year.

Few new staff were recruited at all levels, especially the senior levels, even though more and more staff left the department. This trend continued until 1992-3.

Although staff numbers were decreasing, the number of registrars was increasing. As the National and West African Colleges of Surgeons became more firmly established, more candidates enrolled for the training programmes. Before 1989-90 the department's ratio of staff to registrars was well within the limits recommended by the colleges, and the ratio of staff to undergraduates was within the National Universities Commission's recommendation (see table 2).

Discussion

Since 1975, numbers of academic staff in the department have been declining as a result of high staff mobility, largely at senior grade, out of the department. Replacement of senior staff was slow and occurred from within the department.

More lucrative offers elsewhere and a declining national economy have led to a mass exodus of univer-

Table 3—*Number of successful candidates at various levels of examinations in surgery, Ahmadu Bello University*

Year	Primary	Part I	Part II	Total
1975	1	0	0	1
1976	2	1	0	3
1977	3	0	0	3
1978	0	0	0	0
1979	0	0	1	1
1980	1	0	2	3
1981	4	1	0	5
1982	2	3	0	5
1983	2	3	0	5
1984	3	3	1	7
1985	1	2	0	3
1986	2	3	2	6
1987	2	1	4	7
1988	6	1	0	7
1989	4	1	1	6
1990	6	2	0	8
1991	11	6	1	18
1992	6	7	1	12
1993	4	7	1	12
Total	60	37	14	110

0=No candidates or no passes.

sity staff, most evident in the department of surgery. They moved not only to technologically developed regions and to the Middle East, where the pay is good and the facilities modern, but also to other African countries that were considered to be less developed but more stable politically and economically than Nigeria. The lack of teaching aids and equipment and a drastic reduction in foreign aid (staff exchange and supplies of books, journals, and equipment) has encouraged staff migration, as has the decline in social standing of "academics" and medical doctors and the relatively slow rise to the top in a university department of surgery.

As a result of this trend, in 1988 the faculty of medicine started recruiting medical graduates from the top 15% of their year as assistant lecturers, encouraging them to make a career in the teaching profession within the medical specialties.

In spite of all efforts, student-teacher contact time is short, and the atmosphere for research and continuing medical education and therefore for staff development is inappropriate. Many countries in tropical Africa may be going through this decadence; the future of medical education seems bleak.

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Controversies in Management

Screening asymptomatic people at high risk for hepatitis C

The case for

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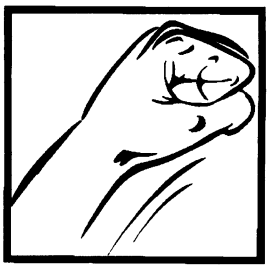

In some respects hepatitis C is hepatitis B revisited. Years after the discovery of hepatitis B virus and 11 years after development of a safe, efficacious vaccine, consensus has emerged in the international health community that decisive global action against hepatitis B is a necessity.[1] Those who doubt that a similar approach will be needed towards hepatitis C point to a relative lack of knowledge of the clinical course of hepatitis C and the efficacy of treatment.

In 1989 hepatitis C virus was cloned and characterised as a positive sense, single stranded RNA genome containing 9400 nucleotides. It is a major cause of post-transfusion hepatitis[2]; up to 50% of patients commonly progress to chronic hepatitis and 20% to cirrhosis with secondary complications such as hepatocellular carcinoma.[3] A problem arises because hepatitis C may have a progressive course to chronic disease occurring over decades, during which time the individual may be symptom free and the disease remain undiagnosed until the patient presents with liver disease or its complications.[2 3]

Likely size of the problem

In the United States 3.5 million people are estimated to have chronic hepatitis C; of these, 8000-10 000 die of liver related complications and 1000 undergo liver transplantation.[4] Around 23% of patients given a transplant had hepatitis C virus, and 19% of those given transplants for seronegative cryptogenic cirrhosis developed hepatitis C after transplantation.[4 5] Prevalence is similar in Europe and higher in Japan and other eastern countries.

The hepatitis C virus is transmitted parenterally through blood, blood products, injecting drug misuse, and tattooing, as well as by sexual[6] and household transmission. Serological identification of hepatitis C virus by second and third generation assays for detecting antibodies to the virus (by enzyme linked immunosorbent assay (ELISA) and recombinant immunoblot assay (RIBA)) combined with analysis of hepatitis C virus RNA by polymerase chain reaction have greatly improved specific detection and diagnosis of hepatitis C and have predictive value.[7 8] Hepatitis C virus has now been systematically classified on the basis of nucleic acid sequence analysis to six main genotypes, some associated with severe liver disease.[9]

Thus early diagnosis is now feasible, and it is essential if treatment is to be effective before progression to chronic hepatitis C and cirrhosis, when only the liver transplantation option would apply. The challenge is to decide who to screen and how, and when and why it should be done, and at what cost. These questions are difficult to answer even for of one of our commonest genetic disorders, cystic fibrosis.[10] But there is some encouragement from results of the screening programme of blood donations and transfusion associated hepatitis in Britain, which have shown that between 1 in 1400 and 1 in 5000 first time blood donors have antibodies to hepatitis C virus,[11 12] and suggest that each year 10 000-13 000 transmissions of hepatitis C could be prevented by adequate screening. But what of those who do not donate blood?

Advantages of early detection of hepatitis C

There are clear advantages to targeted screening for hepatitis C virus in asymptomatic people at high risk. Aside from counselling about the disease, its mode of transmission, effects on the liver, and so on, identification of young people in the early stages of the disease would reach those who would benefit most from treatment with interferon alfa. Once they have been identified, counselling of such individuals is likely not only to reduce (or even prevent) further hepatitis C virus transmission but to allow these people to have a

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