

Original Research Article

Teaching Urological Surgery in Guinea: Current Status and Prospects

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Abstract: In Africa south of the Sahara, there are very few urologists. To fill this gap, a training in urology started in Guinea in 2005. The aim of this study was to take stock of this teaching, both theoretical and practical. Two different questionnaires were established for this survey. The first one was addressed to the students in order to collect their satisfaction and wishes regarding the teaching provided, and the second one to the person in charge of the teaching concerned the objectives of the DES, the conditions of participation in this training, and the teaching methods. Nineteen students (76%) responded to our questionnaire. Their average age was 34.74 years. The teaching provided was close to the practical concerns of the students in 68.42% of cases (n=13). The difficulties encountered by the enrollees were dominated by the payment of training fees (73.68%; n=14) and access to the internet (68.42% n=13). The most cited suggestions were the improvement of the technical platform (13.32%; n=4), easy access to the internet and scientific journals (10%; n=3). The surgical simulator, surgical training in animals, and surgical tutoring during the course are the practical teaching methods to be promoted according to the training manager. In conclusion, our study has enabled us to form an opinion on the training of doctors in the context of specialisation in Guinea, and to highlight what has been achieved and what needs to be improved in order to maintain the quality of teaching.

Keywords: Urology, teaching, Guinea.

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INTRODUCTION

Urological pathologies are numerous and variable. They can appear at any age and some of them have a great impact on the quality of life of individuals. These affections constitute a serious health problem for African populations south of the Sahara, particularly in Guinea.

In an attempt to solve this problem, specialized training in urology and andrology was set up in 2005, not only to reduce the risks and complications of these conditions, but also to reduce the rate of patients being evacuated abroad.

Generally speaking, there are very few urologists in Africa south of the Sahara. Most urological care is provided either by general surgeons or by clinicians, who have received 2-3 years' basic training to deal with common clinical problems [1].

There has been no study of urology teaching in Guinea. With a view to improving it, we set ourselves the

goal, on the one hand, of taking stock of this teaching, whether theoretical or practical. On the other hand, we wanted to find out how those enrolled felt about the organization, access and difficulties associated with this training.

II- METHODS

II-1 Study design and population selection

We conducted a survey of the teacher in charge and students enrolled in the 2021-2022 Diploma of Specialized Studies (DES) in Urology. The survey was approved by the teachers of the said D.E.S. and validated by the professor in charge.

II-2 How the study was carried out Survey

We drew up an anonymous survey form using sphinx software. The survey covered both theoretical and practical teaching. Two different questionnaires, accompanied by an explanatory letter, were initially sent by e-mail in Word format.

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The questionnaire addressed to the head of the chair of urology, coordinator of the DES diploma of specialized studies, covered the objectives of the DES, the conditions of participation in this training, the teaching methods (organization of these courses and practical training workshops), the various tasks of the DES doctors, and the methods of theoretical evaluation and validation of the DES.

The questionnaire for DES students focused on their satisfaction with theoretical courses (organization, content, accessibility, participation in regional and national training days), practical training workshops (nature, number, satisfaction), and theoretical assessment and DES validation procedures.

DES satisfaction with the various elements assessed was collected using a simple numerical scale from 0 to 3 (0: very dissatisfied; 1: dissatisfied; 2: satisfied; 3: very satisfied). A final open-ended question for suggestions for improvement.

II-3 Statistical analysis

Survey results are presented with descriptive statistics. Survey responses were collected and analyzed using sphinx software. Qualitative data are described with their number and frequency. Quantitative data are described by their mean, standard deviation and extreme values.

III-RESULTS

For our survey, the director of the DES (Diploma of Specialized Studies) and 19 students, i.e. 76% of those enrolled, replied. It should be noted that training takes place in a single university hospital.

1-Survey of the DES manager

Several items were addressed

Status of the manager, number of graduates and organization of teaching.

The head of the DES is a full professor of CAMES (African and Malagasy Council for Higher Education). According to him, three classes have been trained since the creation of the diploma. The 4th is currently being trained.

According to the head of this training program, a booklet containing the organization and syllabus of the courses is given to students as soon as they register.

Teaching methods

Teaching is organized by the Chair of Urology in conjunction with the Pedagogical Committee. It includes: lectures by students, seminars, group courses for separate classes with a specific program for each year. In some cases, the courses are given to all DES students from all classes. Weekly lectures last 2 hours and take place during the internship and during the day. All classes benefit from theoretical instruction. All

theoretical courses are taken over 4 years, with the final year devoted to rural or foreign internships.

The course syllabus and breakdown were given to students at least one month before the first course of the year.

Sessions are prepared and presented by students in turn. Presentations last around 45 minutes, and are followed by clarifications from the moderator. The lectures, in PowerPoint format, are available on a department computer for free access by all students.

As far as the coordinator is concerned, the teaching provided is faithful to the content of the official program. And complementary training courses such as DU/DIU are not compulsory as part of the DES. Theoretical teaching is validated by a written examination.

Practical training takes place in hospitals, in the urology department, in other surgical departments, and even in rural or foreign internships.

Among the practical teaching methods to be implemented, the training manager considers the following to be relevant: surgical simulator, surgical training on animals, surgical tutoring throughout the internship.

Assessment procedures and principles

Assessment is final at the end of the second semester and covers all teaching units grouped into 3 tests:

- A written test: covering the year's theoretical courses;
- An internship report: covering all the activities carried out during the year's internships;
- A patient test: on a patient to be observed in the presence of a school teacher. It comprises two phases: clinical observation and presentation of this observation to the jury.

In the final year of training, these three tests are supplemented by the operating room test, in which each candidate is given a patient to operate on in front of a panel of judges.

Passage to the next year is conditional on obtaining a mark ≥ 5 in each test. A mark < 3 in a test is eliminatory; a make-up session is organized for candidates who have not validated a test but have a cumulative average ≥ 5 without an eliminatory mark.

Authorization to defend the thesis is subject to validation of all theoretical and practical courses and internships.

Teaching difficulties and prospects:

Insufficient endoscopic equipment and the absence of other urology departments, combined with the growing number of students enrolled, are the main difficulties encountered, according to the training manager.

To make this training more competent, the head of the DES intends to make a plea to the authorities to equip the department and implement practical teaching methods that he finds relevant, such as: the surgical simulator, surgical training on animals, and surgical tutoring throughout the internship.

2- Student population

For the year 2021-2022, the number of students enrolled in the DES in urology and andrology in Guinea was 25. For our survey, 19 students responded to our questionnaire, i.e. 76%.

The average age of the study population was 34.74 years, with a minimum of 29 and a maximum of 40. The most dominant age group was between 35 and 40 (Figure 1).

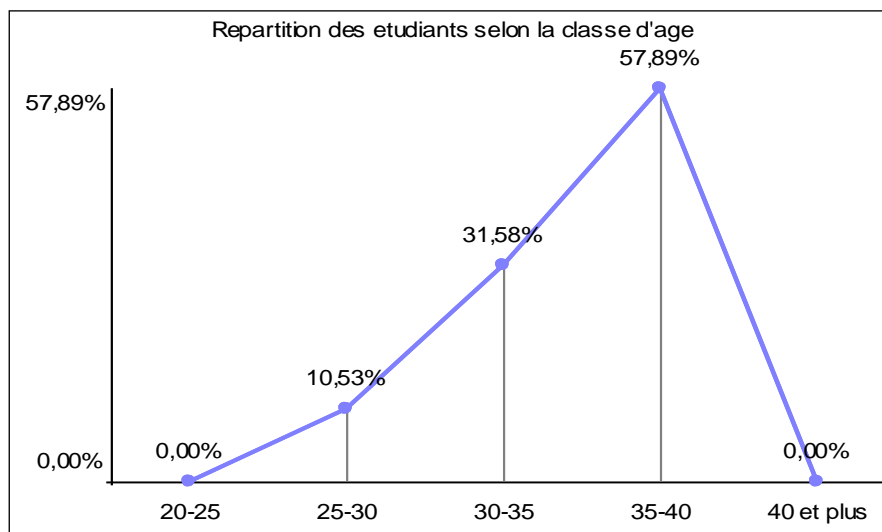


Figure 1: Distribution of students by age group

There were no women among them. And more than half were married, i.e. 68.42% (n=13). None of them had a state scholarship. Only two were civil servants with an average salary of 2000000 FG (227.71Euros).

Training fees averaged 7762500FG (883.83 Euros), with a maximum of 11100000FG (1263.84 Euros) for foreigners and a minimum of 5000000FG (569.30 Euros) for nationals. Of the 19 enrolled, 3 were foreigners: one from Chad, one from Benin and one from Côte d'Ivoire.

A) Theoretical courses

All teaching is organized by the Chair of Urology and takes place at Conakry University Hospital.

1-Knowledge of course syllabus on enrolment

At the start of training, on enrolment, 78.95% (n=15) of students said they had received a syllabus, compared with 21.05% (n=4).

2-Student satisfaction with teaching methods

Table I shows student satisfaction with the teaching tools used for theoretical instruction (student presentations, lectures, seminars, etc.), their hourly volume and content.

For 68.42% (n=13) of students, the teaching provided is close to their practical concerns. Ten point fifty-three percent (n=2) found the teaching inadequate. And 21.05% (n=4) had no opinion.

Table I: Distribution of registrants according to satisfaction. Several answers were possible

Satisfaction	Number	Percentage
Teaching aids used for theoretical instruction	Very satisfied	4 (21,05%)
	Somewhat satisfied	10 (52,63%)
	Somewhat dissatisfied	3 (15,79%)
	dissatisfied	0 (0,00%)
	No opinion	2 (10,53%)
The hourly volume of theoretical courses	Very satisfied	1 (5,26%)
	Somewhat satisfied	14 (73,68%)
	dissatisfied	0 (0,00%)

Satisfaction		Number	Percentage
Theoretical course content	No opinion	4	21,05%
	Very satisfied	4	21,05%
	Somewhat satisfied	11	57,89%
	Dissatisfied	0	0,00%
	No opinion	4	21,05%
Quality of teaching	Very satisfied	1	5,26%
	Somewhat satisfied	13	68,42%
	Dissatisfied	1	5,26%
	No opinion	4	21,05%

3-Difficulties encountered by students in attending classes

Of the 19 students surveyed, only one said he had no difficulties. The others were sometimes confronted with difficulties in 42.11% (n=8), always and

often exposed to such difficulties in 36.84% (n=7) and 15.79% (n=3) respectively.

These difficulties are dominated by payment of training fees (73.68%; n=14) and access to the Internet (68.42% n=13) (Figure 2).

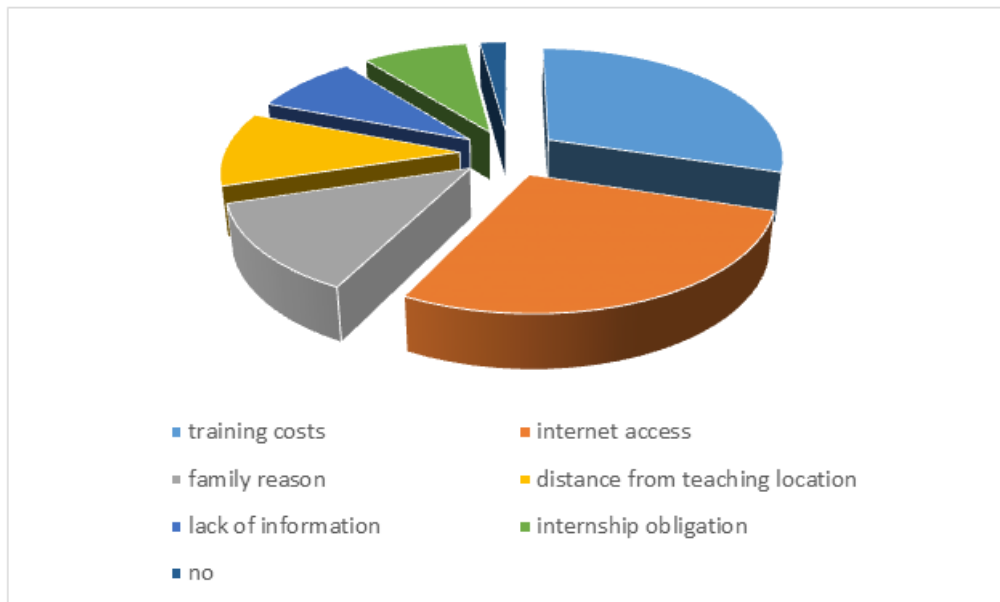


Figure 2: Difficulties encountered by registrants

4-Participation of DES students in national or international meetings and self-training

Participation in international conferences was recorded by 21.04% (n=4) of respondents, compared with 78.95% (n=15), and was financed by the company's own funds. On the other hand, participation in national meetings was higher, at 68.42% (n=13).

However, for their self-training, weekends and evenings are the times most frequently used by

respondents, at 73.68% (n=14). This was followed by on-call rests and days off (31.58% (n=6) in each case). Twenty-six point thirty-two percent (n=5) prefer days off.

For this self-training, 78.95% (n=15) of registrants have access to urology or anatomy books and manuals (see Table II).

Table II: Tools available to registrants for self-training Several answers were possible

Access to certain types of training	The number	Percentage
Articles referenced	10	52,63%
textbooks on surgery or anatomy	15	78,95%
E-learning platform	1	5,26%
Dissection sessions	0	0,00%
No	3	15,79%

4-Necessity of theoretical teaching of its reorganization and organization of online teaching 94.74% (n=18) of those questioned felt it was essential to teach the theoretical aspects of the DES.

Fifty-seven point eighty-nine percent (n=11) of respondents strongly agree with the reorganization of this teaching; 31.58% (n=6) tend to agree, while 10.53% (n=2) are undecided.

Over 2/3 of registrants (89.47%; n=17) surveyed were in favor of online teaching. The remaining 10.53% (n=2) were not in favor.

B) Practical courses:

1-Student training in out-of-patient procedures:

All respondents were unanimous on the non-existence of training workshops such as surgical training

on animals, cadaver dissection sessions or access to a surgical simulator. They all agreed that these workshops were not essential to their training, but felt that they should be integrated into practical teaching.

C) Student evaluation of teaching:

According to all those surveyed, there is no system for student evaluation of teaching or teaching staff.

D) Suggestions for improving the teaching of the urology DES:

Registrants made several suggestions for improving their training. The most frequently cited were to improve the technical facilities by equipping them with urological endoscopy equipment, and to give registrants easy access to the Internet and scientific journals. These suggestions are listed in Table III.

Table III: Students' suggestions for improving DES training Multiple answers were possible

Suggestions	Frequency	Percentage
Equipping the technical platform for urology endoscopy	4	13,32%
-Facilitating access to the Internet and scientific data sources	3	10%
-Online courses		
Avoiding patient personalisation in the CHU	1	3,33
Reduce training costs	1	3,33%
Make it easier for all DESs at the end of their training to obtain practical training in countries where the technical facilities are better.	2	6,66%
Make it easier for all DESs at the end of their training to obtain practical training in countries where the technical facilities are better.	2	6,66%
Sometimes call on international experts for training purposes	2	6,66%
Reorganising teaching	3	10%
Reduce training costs	1	3,33%
Organisation of medical writing training sessions	1	3,33%

III- DISCUSSION

To promote learning, there is no single ideal teaching technique or tool, but rather a range of techniques and tools at the service of a genuine teaching strategy. Faced with the development of new training technologies, teachers must systematically compare the skills they are aiming for, their pedagogical intentions, the resources they have at their disposal and the choices they make in terms of learning assessment [2].

The Chair of Urology at the Faculty of Health Sciences and Techniques in Conakry has been training urologists for almost 20 years. The average age of DES registrants during our study period was 37.74 years. This average was similar to that reported by Avakoudjo [3], who recorded an average of 33.9 years. On the other hand, in developed countries, particularly France, the age of students was significantly lower [4, 5]. It should be noted that to register for the DES in Guinea and in most of our South-Saharan countries, it is necessary to have a doctorate in medicine, unlike French interns.

As with most specialized medical studies in our sub-region, doctors often have to find the necessary

funding for the five years of training before enrolling in this program. All these reasons could explain the high age of our students.

Furthermore, among our respondents, we found no women enrolled in the DES urology program since its inception. This could be one of the reasons why there are no female urologists in Guinea or in most countries in the West African sub-region. This observation was made by Avokoudjou [3] in Benin, and we believe that it is essential to feminize urology in our sub-region by motivating women to register for a urological specialization. In the French study by Bigot [5], 18% of interns and chief clinical assistants (CCA) in urology were women. This confirms recent data according to which in the next four years the number of female senior urologists in this country will double [6].

DES students in our country do not receive grants. As part of their training, they are required to work on-call and on-call, and to take part in consultation and operating theatre activities. Despite these services, they receive no bonuses or financial assistance. Among DES in Benin, self-financing was 25%. In this country, the granting of a scholarship by international institutions or

the national budget is acquired at the end of a process that often takes several months or years after the doctorate [3]. It is all these financing difficulties that force general practitioners to work for a few years in order to build up the capital needed to cover DES-related expenses. Generally speaking, medical training in sub-Saharan Africa is financed by the country's own resources. That's why some foreign students come to enroll in Guinea, where the cost of living is considered by many to be lower.

The registration fees for the training of our students were 7762500FG (883.83 Euros), however in France it is estimated at 508 Euros. In this country, interns are paid for their activities. Their median remuneration is estimated at 59.51 Euros per on-call duty in the event of travel (half-call), and 119.02 Euros per shift, known as fixed hardship compensation. Saturday and Sunday guards are paid 1.5 times and 2 times more respectively [7]. If they don't get a scholarship, they are obliged either to work on the side or to take out loans which they will have to repay when they settle in. At the end of their training, young American urologists may have to pay sums ranging from \$100 to \$150,000 [8].

In addition to funding concerns, access to the Internet is also a crucial problem facing more than half of our respondents (68.42% n =13). This is due to cost, low bandwidth and inaccessibility to scientific journals. Today, the Internet is seen almost unanimously as a promoter of change for at least three reasons: it is a massive source of data, a place for "rough" storage rather than organized memory, and it is a purveyor of links between distant individuals with similar concerns [9].

For future urologists, obtaining the Diplôme d'études spécialisées (DES) in urology is only possible if they pass their various examinations and practical training, culminating in the writing of a dissertation on subjects related to the specialty.

The dissertation is supervised by a senior lecturer. It is a personal and original piece of clinical research that our future urologists are expected to complete at the end of their training.

According to a number of authors [16], training in medical research through a DES dissertation offers several advantages for the professional future of urologists.

Future practitioners, Firstly, this experience is sometimes the only opportunity to acquire or develop the curiosity and techniques needed to develop habits leading to long-term learning. Such training can help develop critical thinking and avoid empiricism in clinical practice. Finally, it can provide guidance in choosing a career.

Our survey shows that formative and certifying assessment is an effective part of our DES training. However, in France in 2015, in the study by Faivre *et al.*, [17], it was only carried out to a minority extent by certain specialties, and was often requested by interns.

Assessment seems to be the key element in the teacher-learner dynamic. Indeed, students learn differently depending on the evaluation method used. Assessment also influences a student's motivation to learn [18].

The main limitation of our results, as with all studies of this type, is that only the opinion of the respondents could be taken into account.

There is a non-participation bias due to non-responding students. These non-respondents were either uninterested in the subject or afraid of the consequences for their academic or professional career, despite the guarantee of anonymity.

IV- CONCLUSION

This study provides an initial overview of the theoretical and practical aspects of specialist training in Guinea, particularly in urological surgery.

For 68.42% (n=13) of students, the teaching provided is close to their practical concerns. In this training programme, students are directly involved in the development of their courses and deliver them in front of their fellow students under the supervision of a professor accompanied by his or her assistant. Assessment, both formative and certifying, is an integral part of our students' training.

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