

Pathology as a Profession: Contribution of Undergraduate Training on Choice of Career among Final Year Students of A Medical School in North Central Nigeria

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ABSTRACT

Background: The choice of pathology as a profession by would be resident doctors, will, to a large extent depend on the amount of knowledge acquired on the subject at the undergraduate level.

Methods: A questionnaire was self administered to final year medical students of University of Jos shortly after the completion of the final written paper in medicine in September 2005; meant to elicit their views on choosing pathology as a profession after graduation.

Results: Eighty five students enrolled comprising 65 (76.5%) males and 20(23.5%) females. Ninety six percent of the students were between 26 and 30 years. Those who found Pathology interesting were 76.5%; 18.8% picked pathology as their career of first choice after graduation, 5.9%, 3.5% and 5.9% as 2nd, 3rd and 10th choices respectively. Among the pathology disciplines, 8.2%, 4.7%, 3.5% and 2.4% would specialize in Histopathology, Haematology, Chemical Pathology and Medical Microbiology respectively. The students generally complained of inadequate time and exposure during the postings as well as the difficulty in understanding Medical Microbiology.

Conclusion: More time should be allocated to the teaching of Pathology at the undergraduate level. Learning enhancing aids should be introduced such as: regular practical demonstrations, audio-visual teaching aids, computer assisted programs and the establishment of pathology museums in the medical schools across the country.

KEYWORDS: Pathology; Undergraduate training; Choice of career.

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INTRODUCTION

Pathology is a medical specialty that provides the scientific foundation for all medical practice. The pathologist works with all other medical specialties, using the tools of laboratory medicine (histology, cytology, biochemistry, molecular biology etc) to provide information essential to problem solving in clinical practice¹. Because of the broad and heterogeneous nature, the field of pathology allows one to select a niche which suits his or her specific desires and needs. It may

be strictly in community or in private clinical practice, or in academic medicine, with components of research and /or teaching. It may be Anatomic or Clinical Pathology or a combination both. Pathology has therefore the flexibility to accommodate most individuals².

The role of the clinical pathologist in medical practice is diverse, these include³:

- * consultant to the physician
- * consultant to the patient
- * director of laboratories
- * an administrator
- * a researcher, and,
- * a lecturer

In line with these functions; which an undergraduate medical student may not be fully aware of, the training curriculum in Pathology among undergraduate medical and dental students in Nigeria tries to take students through all the key important aspects of Pathology (Chemical Pathology, Haematology, Medical Microbiology and Histopathology). The amount of training students receive at the undergraduate level in these disciplines could to a large extent impact on their choices of specialty after graduation.

The training of undergraduate medical students has undergone several changes over the past few decades⁴ and even at present several teaching formats are being proposed as the best alternatives to use in training upcoming doctors⁵⁻¹⁰. In a study carried out at Arabian Gulf University Medical School in the Middle East in 2001 on fifth and sixth year medical students¹¹ on integrating applied anatomy in surgical clerkship in a problem-based learning (PBL) curriculum; it was found out at the post test assessment that, the over all performance of the students was significantly higher, their confidence increased and they liked the course more. In another study carried out on medical schools in South-East Asia showed that several medical schools were gradually adopting PBL methodology for their students and were amazed with the enthusiasm and encouraging output by the students thereafter¹². In the University of Texas Medical School, when PBL was introduced in a course in dental implantology, the performance of the undergraduate medical students was well beyond the expectations of the faculty, this was accompanied by

increased interest and a high level of enthusiasm in the subject¹³.

In Nigeria, not much work has been done in this regard, however, Faponle in a study on undergraduate medical students on their choice of career after graduation observed that none of the students liked anesthesia nor would choose it as a career after graduation¹⁴.

The level of enthusiasm created in a student and the love developed towards a particular subject among other factors depends to a large extent on the methods adopted in teaching it¹⁵⁻¹⁷, and students are most likely to choose the subject they like most for their postgraduate training^{18,19}. This study was therefore designed to assess the views of undergraduate medical students about to graduate on choosing Pathology as a profession. The findings will be used as well to assess the effectiveness of the current teaching patterns in pathology in our medical schools and possibly offer appropriate recommendations for improvement.

MATERIALS AND METHODS

Study Area- The study was carried out in Jos, the capital city of Plateau state where university of Jos medical school resides. The state is located in the north central Nigeria. It is bounded in the south mainly by Nassarawa and Kaduna states, on the north and west by Bauchi state and on the east by Taraba state.

Study Design- The study was carried out at University of Jos medical school; the school admits students into medicine and surgery with majority from all parts of Nigeria, fewer from other African countries and other parts of the world. All willing final year students sitting for their final examinations in medicine and surgery in September 2005 were recruited into the study. A questionnaire meant to assess student's views on choosing Pathology as a profession after graduation was self administered. Each student was handed a copy of the questionnaire at time of submission of his or her final written paper in medicine. The questionnaires were filled and submitted back at the same time. All the responses of the students were compiled and the data obtained was analysed by simple descriptive methods. Ethical approval for the study was obtained as well as consent from the subjects.

RESULTS

All the 85 questionnaires administered were filled correctly and returned. This consists of 65(76.5%) males and 20(23.5%) females. Ninety six percent (n=77) of the students were within 26 to 30 years old

bracket; 3.3% (n=3) were between 21 and 25 years old while none was less than 20 years or above 35 years old.

Sixty five (76.5%) of the students found Pathology subject quite interesting; 9(10.6%) did not find it interesting but studied it; 5(5.9%) found it boring while 4.7% (n=4) looked at it as just a component of their curriculum. Two (2.3%) students had no idea. Table I. Sixteen students (18.8%) picked Pathology as their profession of 1st choice after graduation; 5(5.9%) picked it as second choice; 3(3.5%) as third choice while 5(5.9%) students picked it as the 10th choice. Eleven students did not have any interest in Pathology. Subjects with more 1st, 2nd, and 3rd choices among the questionnaires were Internal Medicine, Surgery, Obstetrics/Gynaecology and Paediatrics. Table II. Among the students who would want to specialize in various disciplines of Pathology after graduation; 7(8.2%) would specialize in Histopathology; 4(4.7%) in Haematology; 3(3.5%) in Chemical Pathology and 2(2.4%) in Medical Microbiology. Table III.

Table I. Students Interest in Pathology as a Subject

RESPONSE	NUMBER
Quite interesting	65(76.5)
Not interesting but I study it	9(10.6)
Boring	5(5.9)
Just a component of my curriculum	4(4.7)
No idea	2(2.3)
TOTAL	85(100)

Parenthesis = Percent

Table II. Preference for Pathology Compared to other Medical Areas

CHOICE	NUMBER
1 st Choice	16(18.8)
2 nd Choice	5(5.9)
3 rd Choice	3(3.5)
4 th Choice	10(11.8)
5 th Choice	4(4.7)
6 th Choice	12(14.1)
7 th Choice	6(7.1)
8 th Choice	5(5.9)
9 th Choice	8(9.4)
10 th Choice	5(5.9)
Not Chosen	11(12.9)
TOTAL	85(100)

Parenthesis = Percent

Table III. Choice of Departments among First Respondents

DISCIPLINE	NUMBER
Chemical Pathology	3(3.5)
Medical Microbiology	2(2.4)
Histopathology	7(8.2)
Haematology	4(4.7)
TOTAL	16(18.8)

Parenthesis= Percent

DISCUSSION

The study was carried out in September 2005 on final year medical students of University of Jos shortly after their final written paper in medicine. This was to find out their views as regards choosing Pathology as a profession after graduation.

Eighty five students comprising 65(90.6%) males and 20(23.5%) females were enrolled into the study. The fact that over 90% of the students were within the same age bracket shows that age difference could not have been a significant factor on the varying views upheld by them on this subject matter.

Over 76% of the students found studying pathology quite interesting but only 18.8%, 5.9%, and 3.5% choose it as their course of 1st, 2nd and 3rd choices respectively after graduation. Majority of the students complained that the duration of the postings in Pathology was too short for their liking. This complaint is of great significance to the students; as the short duration of the course did not permit an understanding of the basics of the subject. This view is similar to that held by students in Ile-Ife on a similar study on anaesthesia⁴. A review of the undergraduate curriculum in Pathology in the Nigerian medical schools with the aim of allocating more time to it will be important. This will avail students more time to appreciate the subject more and make them better informed at decisions on specialization after graduation.

The duration of time given to the postings in medicine and surgery coupled with the freshness of the subject in the minds of the students; since it is the last paper to write and graduate; could also contribute to the recurrence of these subjects in the first and second choices among the specialties.

Among the four disciplines of Pathology: 7(8.2%) indicated interest to specialize in Histopathology; 4.7% (n=4) in Haematology; 3.5% (n=3) in Chemical

Pathology and 2.4% in Medical Microbiology. Similarly, students complained of the inadequate time allocated to the posting in each of these four disciplines. Inadequate practical exposure was also mentioned by a sizable number of students.

Several students complained of the difficulty in understanding microbiology especially virology, mycology and general microbiology sections. This could explain the reason why only 2 students in the entire class indicated interest in specializing in the discipline after graduation. Demonstrations, audiovisual teaching aids and computer assisted programs should be introduced in the teaching of the various disciplines of pathology especially microbiology. This will no doubt enhance the understanding of the medical students on these subjects as well as create a better mental picture of the concepts of these disciplines. The establishment of pathology museums in the medical schools in the country will also be a booster to knowledge and a source of motivation for the students. The need for enhanced teaching skills among the resource persons teaching the subjects is also important.

Globally, the undergraduate curriculum in medicine is tilted towards patient-based learning (PBL) format since it is increasingly receiving universal acceptance as the ultimate approach in enhancing students' understanding^{12,13,15,16}. It is high time the medical curricula in the country be reviewed and PBL which is built on contextual learning theory²⁰ is used in training of medical students.

In trying to implement such alternative teaching methods, each medical school should however define the following: the extent to which faculty should direct students throughout medical training; PBL methods that are less costly; cognitive-processing weaknesses shown by PBL students; how to handle the large number of students which is not compatible with application of PBL methods, and the apparent high resource utilization by PBL graduates^{21,22}.

The low rate of enrolment of graduate medical doctors in the residency training program²³⁻²⁵ in Pathology in the country could be attributed to the residual impression carried along from the undergraduate level²⁶⁻²⁹; although another study on graduate medical doctors seeking to enroll in residency training program will be required to further expost on this view.

In conclusion, medical students at undergraduate level find Pathology as a subject interesting but express worry over the short duration of time allocated to it; and the difficulty in understanding it especially the area of

Medical Microbiology. More time should be allocated to the teaching of this program. Effort should as well be made to introduce the use of learning enhancing aids. These may include: regular practical demonstrations, audio-visual aids, computer assisted programs and establishment of pathology museums in our medical schools; the introduction of PBL methods of teaching pathology will also boost students' understanding of the subject as well as increase their enthusiasm towards studying it.

This, to a large extent, would increase the number of our graduate doctors signing in to specialize in any of the disciplines of Pathology.

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QUESTIONNAIRE

1. Sex M..... F.....
2. Age (Years) <20....21 - 25....26 - 30....31 - 35....36-40....>40....
3. Duration of posting in pathology at undergraduate level.
 - a) Chemical pathology.....
 - b) Haematology.....
 - c) Microbiology.....
 - d) Histopathology.....
4. What is your own understanding of pathology as a specialty?
 - a) Quite interesting.....
 - b) Not interesting but I study it.....
 - c) Boring.....
 - d) Just a component of my curriculum.....
 - e) No idea.....
5. In which areas do you think there should be improvement in the teaching of pathology?
6. Which specialty would you like to take after graduation? (Indicate 1, 2, 3, ... in order of preference).
 - a) General medical practice.....
 - b) Anaesthesia.....
 - c) Pathology.....
 - d) Surgery.....
 - e) Internal Medicine.....
 - f) Paediatrics.....
 - g) Ophthalmology.....
 - h) Obstetrics and Gynaecology.....
 - i) Radiology.....
 - j) Otorhinolaryngology.....
 - k) Community Medicine.....
 - l) Others.....
7. If you should choose pathology as a specialty, which of the sub-specialties would you prefer? (Indicate 1, 2, 3,.. in order of preference).
 - a) Chemical pathology.....
 - b) Haematology.....
 - c) Histopathology.....
 - d) Microbiology.....
8. Do you have any reason for your choice?
9. Do you have any other comment to make about this discussion?