

PERFORMANCE OF STUDENTS IN ANATOMY IN THE 2ND MBBS EXAMINATIONS IN SOME NIGERIAN UNIVERSITIES

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SUMMARY

Aim: The aim of our study was to compare the pass rates of medical students in anatomy with those of medical biochemistry and physiology

Method: The 2nd MBBS (Part I MBBS) examination results of some medical schools in Eastern Nigeria over a variable period of 3-5 years were obtained. The schools were those of Abia State University (ABSU), Nnamdi Azikiwe University (NAU), University of Port Harcourt (UNIPORT) and University of Nigeria, Enugu Campus (UNEC). The performance of students in anatomy, medical biochemistry and physiology were compared,

Result: ABSU and NAU had relatively smaller populations of students than UNIPORT and UNEC. The percentage passes in anatomy in ABSU, NAU, UNIPORT and UNEC were 78.31%, 79.3%, 41.24% and 54.7% respectively. The performance of students in schools with small populations was better in anatomy than in either medical biochemistry or physiology. The reverse was the case in schools with large populations of students.

Conclusion: Class size plays an important role in the performance of students in anatomy. The lower the population of students, the greater the chances of adequate exposure of students to the study materials, and consequently the better the performance.

Keywords: 2nd MBBS Examination, Students' performance, Comparative Analysis.

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INTRODUCTION

Interest in medical education has been on the increase in the recent past. Rapid increases in the enrolment into medical schools without a corresponding increase in facilities have led to a deterioration of the standard of medical training¹. The quality of students admitted through Joint Admission and Matriculation Board (JAMB) admission process, the quality of teaching, inadequate teaching facilities, disruptions in the university academic programmes due to strikes are contributory factors in the poor performance of medical students². Bergovec et al.³ in a study in Croatia showed that medical performance in the pre-war and post-war periods was better than in the war period.

Ayeni⁴ compared the performance of students that entered by entrance examination with those that entered by direct entry. The effects of the JAMB grades and the Senior Secondary School Certificate Examination (SSCE) grades on the performance of students in the 2nd MBBS (Part I MBBS) examinations were studied by Bangboye et al.² and Salahdeen and Murtala⁵. They showed that SSCE grades are a better predictor of students' performance in 2nd MBBS examinations than the JAMB grades. Some authors have also considered the effect of age on admission, sex and mode of admission, on the performance of students in the 2nd MBBS examination⁶. Oyebola et al.⁷ considered such factors as age, sex, O/level grades and JAMB scores on the performance of students in MCQs and short essay questions in physiology.

Nnodim et al.⁸ compared the performance of students who had studied the gross anatomy of the lower limb by dissection and from prosections. The effect of class size on the performance of students in Anatomy has not been well documented in our environment. Our study was aimed at determining the pass rate in anatomy and to compare it with performance in medical biochemistry and physiology.

MATERIALS AND METHODS

The part I MBBS professional examination results in anatomy; medical biochemistry and physiology from four medical schools in the Eastern part of Nigeria were obtained. The medical schools were those of Abia State University (ABSU), Nnamdi Azikiwe University (NAU), University of Nigeria, Enugu Campus (UNEC) and University of Port Harcourt (UNIPORT). The data were from 1997 to 2001 except those of UNIPORT which were from 1997 to 1999. The data were analyzed with SPSS software. The average scores and percentage pass/fail for each course were calculated for each institution. The performance of students in anatomy was compared with the performance in medical biochemistry and physiology.

Table 1. Performance of students of Abia State University in the Part I MBBS examinations.

Score %	Category	Anatomy		Biochemistry		Physiology	
		No.	%	No.	%	No.	%
0-39	Bad failure	49	8	65	10.6	41	6.68
40-49	Fail	84	13.7	103	16.8	127	20.72
50-69	Pass	478	78	433	70.64	443	72.27
≥ 70	Distinction	2	0.33	12	1.96	2	0.33
Total		613	100	613	100	613	100

RESULTS

Table 1 shows that in ABSU, the students performed better in anatomy than in medical biochemistry and physiology. The better performance in anatomy was statistically significant when compared with medical biochemistry and physiology ($P < 0.05$). As shown in table 2, in NAU, the students did better in anatomy than in medical biochemistry and physiology. The differences were statistically significant ($P < 0.05$).

Table 2. Performance of students of Nnamdi Azikiwe University, Nnewi In the Part I MBBS examinations.

Score (%)	Category	Anatomy		Biochemistry		Physiology	
		No.	%	No.	%	No.	%
0-39	Bad failure	34	5.7	24	4.1	63	10.6
40-49	Fail	89	15	124	21	106	17.9
50-69	Pass	468	79.1	442	74.7	423	71.5
≥ 70	Distinction	1	0.2	2	0.3	0	0
Total		592	100	592	100	592	100

Table 3. Performance of students of University of Port Harcourt in the Part I MBBS examinations.

Score %	Category	Anatomy		Biochemistry		Physiology	
		No.	%	No.	%	No.	%
0-39	Bad failure	217	37.4	45	7.8	121	20.9
40-49	Fail	130	22.4	94	16.2	174	30
50-69	Pass	233	40.2	438	75.5	285	49.1
≥ 70	Distinction	0	0	3	0.5	0	0
Total		580	100	580	100	580	100

Table 3 shows that in UNIPORT, the performance of students in anatomy was worst in comparison with medical biochemistry and physiology. In UNEC, anatomy also recorded the worst result (see table 4). Table 5 highlights the mean scores in anatomy, medical biochemistry and physiology in the various institutions under comparison. The mean scores in anatomy in ABSU, NAU, UNIPORT and UNEC were 55.0%, 52.5%, 43.0% and 47.4% respectively. The percentage passes were 78.31%, 79.3%, 41.24%, 54.7% respectively. Anatomy had higher percentage passes than medical biochemistry and physiology in ABSU and NAU while in UNIPORT and UNEC it had the lowest percentage passes (see table 6).

Table 4. Performance of students of University of Nigeria Enugu Campus In the Part I MBBS examinations.

Score %	Category	Anatomy		Biochemistry		Physiology	
		No.	%	No.	%	No.	%
0-39	Bad failure	326	21.7	178	11.8	152	10.1
40-49	Fail	355	23.6	368	24.5	362	21.7
50-69	Pass	816	54.3	948	63.1	1022	68
≥ 70	Distinction	6	0.4	9	0.6	3	0.2
Total		1503	100	1503	100	1503	100

Table 5. Means and standard deviations of the scores of students of the various medical schools in the Part I MBBS examinations.

	Anatomy		Biochemistry		Physiology	
	Mean %	S.D.	Mean %	S.D.	Mean %	S.D.
Abia State University	55.02	9.78	51.63	7.9	52.83	10.27
Nnamdi Azikiwe University	52.48	7.32	51.27	6.95	49.07	7.06
University of Port Harcourt	43.02	9.12	52.69	8.81	45.84	7.76
University of Nigeria	47.4	10.34	50.24	9.62	50.23	8.38

Table 6. Performance of students of the various medical schools in the part I MBBS examinations.

	Anatomy		Biochemistry		Physiology	
	Pass (%)	Fail (%)	Pass (%)	Fail (%)	Pass (%)	Fail (%)
Abia State University	78.31	21.69	72.6	27	72.6	27.4
Nnamdi Azikiwe University	79.3	20.7	75	25	71.5	28.5
University of Port Harcourt	41.24	58.76	80.25	19.75	51.06	48.94
University of Nigeria	54.7	45.3	63.7	36.3	68.2	31.8

DISCUSSION

In our study, anatomy recorded the highest percentage pass in comparison with physiology and medical biochemistry in ABSU and NAU while in UNEC and UNIPORT it recorded the lowest. ABSU and NAU that recorded high percentage pass in anatomy had a relatively small class size while UNIPORT and UNEC that had low percentage pass had a large class size. Bamgboye et al.², indicated that in the recent years the University of Ibadan had experienced a high failure rate, sometimes over 50%, at the 2nd MBBS examinations. In their study which was for a large class size, 227 candidates, although the failure rates were generally low, anatomy recorded the highest percentage failure in comparison with physiology and medical biochemistry.

Nwohia⁹ noted that there was a higher failure rate in the 2nd MBBS among students who did not read up dissection topics ahead of dissection or did not personally dissect during practical. He indicated that active participation in dissection helps the student to be more familiar with the subject. Khan et al.¹⁰ showed that students with good attendance had better results than those with poor attendance during examinations in basic medical sciences.

Nnodim et al.⁸ in their study of two groups of medical students, who had studied the gross anatomy of the lower limb by different methods (by dissection and from prosections) showed that on testing the students 5 years after a practical learning experience in gross anatomy, the numerical scores gained by students who had studied from prosections were similar to those of their peers who had carried out dissections. They recommended the study of gross anatomy from prosections to institutions faced with unfavourable student-to-cadaver ratios. They suggested that the time gained could be dedicated to such other pedagogical purposes as clinical demonstrations and problem-solving team exercises.

Although there are many factors that may affect the performance of students at the 2nd MBBS

examination our study suggests that class size plays an important role. It would appear that the effects of a large class size on the performance of students are more pronounced in anatomy than in physiology and medical biochemistry. Since anatomy is a more practical oriented subject than medical biochemistry and physiology, it requires that every student be adequately exposed to the study materials such as cadavers, histological slides and teaching models. Consequently the lower the population of students the greater the chances of adequate contact with the study materials. We suggest further studies on the effect of class size on the performance of students at examinations in our environment.

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REFERENCES

1. Brew-Graves SH. Medical education, healthcare and development in Africa. *Afr J Med. Sci* 1992; 21:9-15
2. Bamgboye EA, Ogunowo BE, Badru OB et al. Students admission grades and their performance at Ibadan University pre-clinical MBBS examinations. *Afr J Med Sci* 2001; 30:207-211.
3. Bergovec M, Kuzman T, Rojnic M et al. A Zagreb University School of Medicine: students' grades during war. *Croat Med J.* 2002 Feb;43(1):67-70
4. Ayeni O. A comparative study of the performances of direct and concessional entrants into the University of Ibadan Medical School, 1956-69. *Med Edu* 1972; 6 :277-285
5. Salahdeen HM, Murtala BA. Relationship between admission grades and performance of students in the first

- professional examination in a new medical school. *Afr J Biomedical Research* 2005; 8 (1):51-57.
6. Olaleye SB, Salami HA. Predictors of academic performance in the pre-clinical sciences: effects of age, sex and mode of admission at the Maiduguri Medical School. *Afr J Med. Med. Sci* 1997; 26:189-190.
 7. Oyebola DD, Adewoye OE, Iyaniwura JO et al. A comparative study of students' performance in preclinical physiology assessed by multiple choice and short essay questions. *Afr J Med Sci*. 2000; 29(3-4):201-205.
 8. Nnodim JO, Ohanaka EC, Osuji CU. A follow-up comparative study of two modes of learning human anatomy: by dissection and from prosections. *Clin Anat*. 1996;9(4):258-62
 9. Nwoha PU. Student's attitude and predictor of performance in anatomy. *Afr J Med Sci* 1992; 21:41-45.
 10. Khan HU, Khattak AM, Mahsud IU et al. Impact of class attendance upon examination results of students in basic medical sciences. *Ayub Med Coll Abbottabad*. 2003 Apr-Jun;15(2):56-8.