

# PERFORMANCE OF 300 LEVEL MEDICAL STUDENTS OF THE UNIVERSITY OF BENIN IN THE SECOND PROFESSIONAL MBBS DEGREE EXAMINATIONS: A TEN YEARS RETROSPECTIVE STUDY

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## ABSTRACT

This study was a retrospective study aimed at evaluating the performance of 300 level Medical Students of the University of Benin in the Second Professional MBBS degree examinations consisting of Anatomy, Biochemistry and Physiology. Score sheets from 2002/2003 to 2011/2012 academic sessions were obtained from the School of Basic Medical Sciences and students' performances, that is, passes and failures for each year were extracted. Data were analysed using Graph Pad Prisms and presented as Mean $\pm$ SEM. Comparisons were done using one way ANOVA and P-values of <0.05 were considered as statistically significant. Results revealed that there was no statistically significant difference in the pass rates as well as the failure rates in all the three subjects during the period examined in this study. From the findings of this study, it was concluded that the average performance in all the three subjects were about the same and that none of the departments teaching the various subjects can be said to be doing better than the other.

## INTRODUCTION

Medical training in the University of Benin is currently a six years program which is divided into preclinical stage, that is, the first three years of the training and clinical stage which is the last three years of the training. The actual medical training begins in the preclinical departments where the students study the basic medical science subjects in Anatomy, Biochemistry and Physiology at the 200 and 300 levels for three semesters<sup>1,2</sup>. At the end of the third semester, the students sit for the Second MBBS or Part 11 Professional MBBS

degree examinations. The Professional MBBS degrees examinations remain the only means of assessing the knowledge of medical students in Nigeria<sup>1</sup>. A student must pass the three subjects to proceed to the clinical stage of the training. Failure in one or two subjects lead to a reference in that subject while failure in all three subjects lead to the student repeating a year and the entire examination. A student who repeats the year and fails again is required to withdraw from the course. The Second Professional MBBS degree examinations consist of a continuous assessment (CA), multiple choice questions (MCQ), essay questions (EQ), practical questions (PQ) which is usually in the form of a steeple chase, and viva voce. The format of this examination is adopted by most medical schools in Nigeria and abroad with some modifications in both the internal assessment and university examination pattern<sup>3</sup>. Presently in the University of

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**KEYWORDS:** Anatomy, Biochemistry, Physiology, MBBS, Medical Students

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Benin, the preclinical subjects are taught by three different departments in the School of Basic Medical Sciences, that is, Anatomy is taught by the Department of Anatomy, Biochemistry is taught by the Department of Medical Biochemistry while Physiology is taught by the Department of Physiology. The aim of this study was to evaluate retrospectively the performance of 300 level medical students of the University of Benin in the Second Professional MBBS degree examinations and also to find out whether any of the preclinical departments offering the different subjects was doing better than the other.

### **MATERIALS AND METHODS**

The study was a retrospective study and was based on the actual performance of 300 level Medical Students of the University of Benin in the Second Professional MBBS degree examinations in Anatomy, Biochemistry and Physiology taken at the first attempt from 2002/2003 to 2011/2012 academic sessions. The score record sheets were obtained from the School of Basic Medical Sciences and the following information were extracted: total number of students who sat for the examinations in each year and their percentage passes and failures. Pass mark for Second Professional MBBS degree examinations is usually 50% and above, hence candidates scoring 50% and above were taken as the passes while candidates scoring below 50% were taken as the failures. Data collected were analysed using Graph Pad Prism and expressed as Mean  $\pm$  SEM. Comparison of their performance was done using one way ANOVA and P-values of  $<0.05$  were considered as statistically significant.

### **RESULTS**

Table 1 shows the percentage pass rate in the Second Professional MBBS degree examinations in Anatomy, Biochemistry

and Physiology from 2002/2003 to 2011/2012 academic sessions which is a ten year period. The total number of students that were registered for each year are indicated for each subject as well as the percentage of students that passed the exam for each year. Table 2 shows the percentage failure rate in the Second Professional MBBS degree examinations in Anatomy, Biochemistry and Physiology from 2002/2003 to 2011/2012 academic sessions. The total number of students that were registered for each year are indicated for each subject as well as the percentage of students that failed the exam for each year. Table 3, Figures I and II is showing a comparison in the pass rates and failure rates between each subject taken in the above examination and for the same period under review. Overall the pass rates were about the same. Although the pass rate was higher in Biochemistry, the difference was not significant.

### **DISCUSSION**

The Professional MBBS degrees examinations remain the only means of assessing the knowledge of medical students in Nigeria<sup>1</sup>. There is usually a lot of apprehension and uncertainty among medical students when it comes to the Second Professional MBBS degree examinations. This may be due to the fact that this is the first among the series of Professional examinations they will be taking in the course of their training apart from the examination they took in 100 level (which is regarded as First Professional MBBS degree examinations in the University of Benin and it actually does not involve the basic medical science subjects). Some students tend to wonder which among the three subjects taken at the examination is easier to pass. In their bewilderment a number of students tend

Table 1 - Showing Percentage Pass Rate in the Second Professional MBBS Degree Examinations in Anatomy, Biochemistry and Physiology from 2002/2003 to 2011/2012 Academic Sessions.

Academic Session	Anatomy	Biochemistry	Physiology
2002/2003	n(321), 53.00%	n(344), 84.01%	n(351), 55.84%
2003/2004	n(319), 68.96%	n(307), 69.38%	n(333), 53.45%
2004/2005	n(322), 62.73%	n(318), 60.07%	n(324), 63.58%
2005/2006	n(294), 59.86%	n(315), 70.16%	n(314), 47.77%
2006/2007	n(240), 57.08%	n(251), 52.99%	n(252), 53.17%
2007/2008	n(283), 45.58%	n(293), 67.58%	n(296), 65.54%
2008/2009	n(182), 76.38%	n(185), 82.70%	n(186), 69.89%
2009/2010	n(158), 66.46%	n(152), 75.00%	n(151), 76.82%
2010/2011	n(106), 80.19%	n(103), 73.79%	n(102), 85.29%
2011/2012	n(95), 84.21%	n(92), 96.74%	n(92), 73.91%

Table 2- Showing Percentage Failure Rate in the Second Professional MBBS Degree Examinations in Anatomy, Biochemistry and Physiology from 2002/2003 to 2011/2012 Academic Sessions.

Academic Session	Anatomy	Biochemistry	Physiology
2002/2003	n(321), 47.00%	n(344), 15.99%	n(351), 44.16%
2003/2004	n(319), 31.04%	n(307), 30.62%	n(333), 46.55%
2004/2005	n(322), 37.27%	n(318), 39.93%	n(324), 36.42%
2005/2006	n(294), 40.14%	n(315), 29.84%	n(314), 52.23%
2006/2007	n(240), 42.92%	n(251), 47.01%	n(252), 46.83%
2007/2008	n(283), 54.42%	n(293), 32.42%	n(296), 34.46%
2008/2009	n(182), 23.62%	n(185), 17.30%	n(186), 30.11%
2009/2010	n(158), 33.54%	n(152), 25.00%	n(151), 23.18%
2010/2011	n(106), 19.81%	n(103), 26.21%	n(102), 14.71%
2011/2012	n(95), 15.79%	n(92), 03.26%	n(92), 26.09%

Table 3- Mean Percentage Pass and Failure Rates in the Second Professional MBBS Degree Examinations in Anatomy, Biochemistry, and Physiology from 2002/2003 to 2011/2012 Academic Sessions.

	Anatomy	Biochemistry	Physiology	P-Value
Pass Rate	65.45±3.89	73.24±3.95	64.53±3.81	>0.05
Failure Rate	34.56±3.89	26.76±3.95	35.47±3.81	>0.05

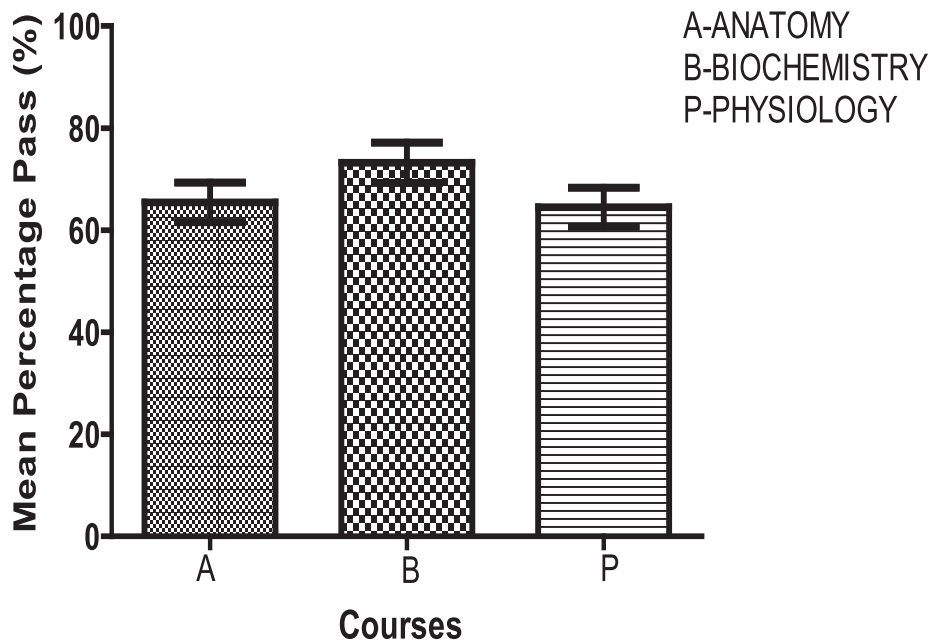


Figure I - Mean Percentage Pass in Anatomy, Physiology and Biochemistry in the Second MBBS Examinations between 2002/2003 and 2011/2012 Academic Sessions.

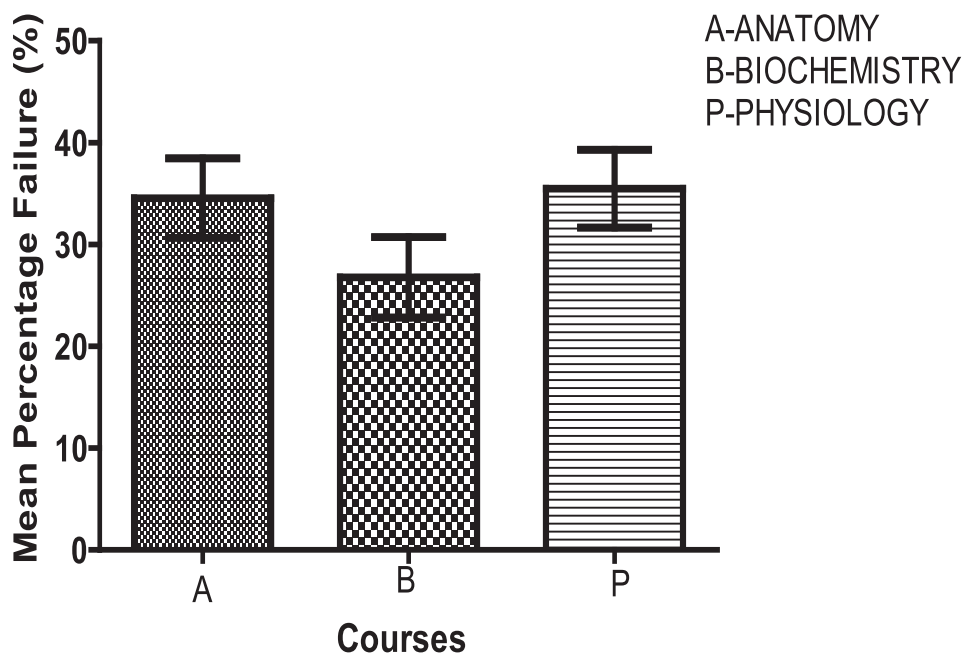


Figure II - Mean Percentage Failure in Anatomy, Physiology and Biochemistry in the Second MBBS Examinations between 2002/2003 and 2011/2012 Academic Sessions.

to drop one of the subjects in the main examination which they feel is more difficult and plan to write it in the resit examination which usually comes up three months later. Is any of the subject really more difficult to pass than the other?

Observations from this retrospective study show that the pass rate among the three subjects taken at the examination is the same which is an indication of the same average performance in all the three departments, that is, Anatomy, Medical Biochemistry and Physiology. Only about two-thirds of the class passed in any of the particular year. This is in agreement with other studies that faulted the speculation that students' pass rate is lower in Anatomy than in Biochemistry and Physiology<sup>4,5,6</sup>. There are occasional years you have 45-50% pass rate and this is noticeable in Anatomy during the 2007/2008 academic session and in Physiology during the 2005/2006 academic session. About 80-85% passed on the other extreme as seen in Anatomy during the 2010/2011 and 2011/2012 academic sessions, in Biochemistry during the 2002/2003, 2008/2009 and 2011/2012 (97%) academic sessions, and in Physiology during the 2010/2011 academic session. Most commonly 65-70% is the average pass rate in any year which is about two-thirds of the class and this pass rate is commendable. This may have been due to the admission criteria which ensured that only qualified students were admitted into the program. Cut-off mark for admission into Medicine is usually very high in most medical schools and this ensures that only the best brains are admitted into the program. The commendable performance observed in this study may also have been due to the qualification and experience of the staff. Some authors have attributed performance in examination to the quality

of teaching<sup>4,5</sup> and the result from this study indicates that the staff of the University of Benin in these three departments under consideration are highly qualified and experienced. Again, the observed performance may also have been due to excellent facilities available for teaching in the University of Benin and this agrees with the findings of some other authors who attributed poor performance to inadequate facilities<sup>7,8</sup>.

A major finding in this study is that Biochemistry had a higher pass rate than the other subjects but it was not significant. Also, the pass rates appeared to be better when less than 200 students were admitted into the program as observed in 2008/2009, 2009/2010, 2010/2011 and 2011/2012 academic sessions. The reduced number of students may have allowed for better teacher-student interaction and thereby improving performance in the examinations and this is in agreement with the findings of Obikili et al.<sup>6</sup> and Oyebola et al.<sup>9</sup> who attributed the failure in anatomy during the Second Professional MBBS degree examinations to overpopulation in some medical schools. Some authors in the past have looked at the relationship between admission grades and performance of medical students at the Professional MBBS degree examination<sup>5,10,11,12</sup> as well as predictive validity of preclinical students' performance in the MBBS Stage I examination<sup>13</sup>. This present study evaluated the performance of medical students in the preclinical stage. However, one may want to know this performance in the clinical stage and see whether there is any correlation between performance at preclinical MBBS examination and clinical MBBS examination, but this will be for further studies.

## CONCLUSION

The findings in this study revealed that the performance of 300 level Medical Students in the second Professional MBBS degree examinations in Anatomy, Biochemistry and Physiology were about the same on the average, no subject appeared to be more difficult than the other in terms of performance and none of the departments teaching the various subjects could be said to be doing better than the other.

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