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EFFECT OF POST-UME-SCREENING TEST ON THE PERFORMANCE OF MEDICAL STUDENTS OF THE UNIVERSITY OF BENIN IN THE SECOND PROFESSIONAL MBBS DEGREE EXAMINATIONS

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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 five years before and five years after the introduction of Post-UME-Screening tests in Nigerian universities. Score sheets from 2002/2003 to 2011/2012 academic sessions were obtained from the School of Basic Medical Sciences and students' scores were extracted and graded as follows: Grade 'A'= 70-100%, Grade 'B'= 60-69%, Grade 'C'= 50-59%, Grade 'F1'= 40-49% (Borderline Failures), Grade 'F2'= 00-39%. Grades 'A', 'B' and 'C' were the passes while Grades 'F1' and 'F2' were the failures. Data were analysed using Graph Pad Prisms and presented as Mean±SEM. Comparisons were done using students' t-test and P-values of <0.05 were considered as statistically significant. Results revealed statistically significant increase in Grades 'A' and 'B' scores five years after the introduction of Post-UME-Screening tests ($P<0.05$). There was an observable increase in Grade 'C' scores but it was not significant ($P>0.05$). Grades 'F1' and 'F2' showed a statistically significant decrease five years after the introduction of Post-UME-Screening tests ($P<0.05$). From the findings of this study, it was concluded that the introduction of Post-UME-Screening test improved the performance of Medical Students in the Second Professional MBBS degree examinations and that the screening also ensured that better quality of students were admitted into the medical school.

INTRODUCTION

In 2005, Universities in Nigeria were granted the power to conduct another screening test after the University Matriculation Examination (UME) conducted by the Joint Admissions and Matriculation Board (JAMB) as a criteria for the admission of students into Nigerian universities. This was the origin of the popular Post-UME-Screening tests [1]. Prior to the introduction of Post-UME-Screening tests, a number of authors have expressed doubt as to the efficacy of using UME score as a major criterion for admission into Nigerian universities [2,3,4,5,6,7,8]. Kale [3] reported that the best performance at the first year university examination was achieved by students with lower UME scores. Similarly, Bamgboye et al. [2] as well as Salahdeen and Murtala [4] found that UME scores had no correlation with performance in the Medical School. Interestingly, Adeniyi et al. [8] found that there was no correlation between UME score and 100 level results but rather with 200 level results in the first two years of Medical School. These lack of correlation were traceable to some lapses observed in the process of admission of candidates into universities in Nigeria through UME (which has been in place since 1979) as it was plagued with a lot of examination malpractices [3,9,10]. This

KEYWORDS: *UME, Post-UME-Screening test, MBBS, Medical Students*

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necessitated the call for an alternative method of admitting students into the nation's universities which eventually led to granting universities the power to conduct Post-UME-Screening tests in 2005 [1]. It is believed by the proponents that Post-UME-Screening test will ensure quality and that when the best students are admitted, the results will also be enhanced. It is also believed that quality admission will produce better quality of graduates/students committed to their studies, and reduced incidence of examination malpractices. However, questions are already arising as to whether the screening tests will ensure quality and whether when the best students are admitted there will be better quality of graduates produced by the universities, having in mind other factors that affect student's performance. It was therefore the aim of this study to evaluate the performance of 300 level Medical Students of the University of Benin in the Second Professional MBBS degree examinations five years before and five years after the introduction of Post-UME-Screening test.

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 taken at the first attempt from 2002/2003 to 2011/2012 academic sessions. Three subjects are taken in the examinations and they are; Anatomy, Biochemistry and Physiology. 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. For the purpose of proper comparison of the students' performances the scores were categorized into grades as follows:

Grade A = 70-100%
Grade B = 60-69%
Grade C = 50-59%
Grade F1 = 40-49% (Borderline Failures)
Grade F2 = 00-39%

Pass mark for Second Professional MBBS degree examinations is usually 50% and above, hence Grade A, Grade B, and Grade C are the passes while Grade F1 and Grade F2 are the failures.

Data collected were analysed using Graph Pad Prisms and expressed as Mean±SEM. Comparison of their performance was done using students t-test and P-values of <0.05 were considered as statistically significant.

RESULTS

Tables 1a,1b and 1c show the score trend in Anatomy, Biochemistry and Physiology MBBS Examinations respectively five years before the introduction of Post-UME-Screening test while Tables 2a,2b and 2c show the score trend five years after the introduction of Post-UME-Screening test. Tables 3a,3b and 3c show a comparison between the mean percentage score five years before and five years after the introduction of Post-UME-Screening test. It can be observed from Tables 3a,3b and 3c that Grades 'A' and 'B' scores showed statistically significant increase five years after the introduction of Post-UME-Screening test ($P<0.05$). Grade 'C' score increased after the introduction of Post-UME-Screening test but it was not statistically significant. However, there was a statistically significant decrease ($P<0.05$) in Grade 'F1' (borderline failure) and Grade 'F2' scores after the introduction of Post-UME-Screening test. Tables 4(a,b,c), 5(a,b,c) and 6(a,b,c) show a comparison between passes and failures five years before and five years after the introduction of Post-UME-Screening test.

Table 1a - Score Trend in Anatomy MBBS Examination from 2002/2003 to 2006/2007 Academic Session (five years before the introduction of Post-UME-Screening test).

Academic Session	Grade A (70-100)	Grade B (60-69)	Grade C (50-59)	Grade F1 (40-49)	Grade F2 (00-39)
2002/2003, n=321	n(4), 01.30%	n(50), 15.60%	n(116), 36.10%	n(88), 27.40%	n(63), 19.60%
2003/2004, n=319	n(1), 00.31%	n(57), 17.87%	n(162), 50.78%	n(57), 17.87%	n(42), 13.17%
2004/2005, n=322	n(4), 01.24%	n(58), 18.01%	n(140), 43.48%	n(86), 26.71%	n(34), 10.56%
2005/2006, n=294	n(2), 00.68%	n(64), 21.77%	n(110), 37.41%	n(53), 18.03%	n(65), 22.11%
2006/2007, n=240	n(3), 01.25%	n(26), 10.83%	n(108), 45.00%	n(50), 20.83%	n(53), 22.09%

Table 1b - Score Trend in Biochemistry MBBS Examination from 2002/2003 to 2006/2007 Academic Session (five years before the introduction of Post-UME-Screening test)

Academic Session	Grade A (70-100)	Grade B (60-69)	Grade C (50-59)	Grade F1 (40-49)	Grade F2 (00-39)
2002/2003, n=344	n(7), 02.03%	n(109),31.69%	n(173), 50.29%	n(44), 12.80%	n(11), 03.19%
2003/2004, n=307	n(5), 01.63%	n(46), 14.98%	n(162), 52.77%	n(23), 07.49%	n(71), 23.13%
2004/2005, n=318	n(4), 01.26%	n(55), 17.30%	n(132), 41.51%	n(68), 21.38%	n(59), 18.55%
2005/2006, n=315	n(17), 05.40%	n(79), 25.08%	n(125), 39.68%	n(41), 13.02%	n(53), 16.82%
2006/2007, n=251	n(2), 00.80%	n(35), 13.94%	n(96), 38.25%	n(33), 13.15%	n(85), 33.86%

Table 1c - Score Trend in Physiology MBBS Examination from 2002/2003 to 2006/2007 Academic Session (five years before the introduction of Post-UME-Screening test) .

Academic Session	Grade A (70-100)	Grade B (60-69)	Grade C (50-59)	Grade F1 (40-49)	Grade F2 (00-39)
2002/2003, n=351	n(5), 01.42%	n(40), 11.40%	n(151), 43.02%	n(66), 18.80%	n(89), 25.36%
2003/2004, n=333	n(0), 00.00%	n(35), 10.51%	n(143), 42.94%	n(67), 20.12%	n(88), 26.43%
2004/2005, n=324	n(0), 00.00%	n(37), 11.42%	n(169), 52.16%	n(63), 19.44%	n(55), 16.98%
2005/2006, n=314	n(2), 00.64%	n(37), 11.78%	n(111), 35.35%	n(38), 12.10%	n(126), 40.13%
2006/2007, n=252	n(2), 00.79%	n(34), 13.49%	n(98), 38.89%	n(50), 19.84%	n(68), 26.99%

Table 2a - Score Trend in Anatomy MBBS Examination from 2007/2008 to 2011/2012 Academic Session (five years after the introduction of Post-UME-Screening test).

Academic Session	Grade A (70-100)	Grade B (60-69)	Grade C (50-59)	Grade F1 (40-49)	Grade F2 (00-39)
2007/2008, n=283	n(0), 00.00%	n(0), 00.00%	n(129), 45.58%	n(45), 15.90%	n(109), 38.52%
2008/2009, n=182	n(8), 04.40%	n(56), 30.77%	n(75), 41.21%	n(22), 12.09%	n(21), 11.53%
2009/2010, n=158	n(1), 00.63%	n(32), 20.26%	n(72), 45.57%	n(26), 16.46%	n(27), 17.08%
2010/2011, n=106	n(2), 01.89%	n(48), 45.28%	n(35), 33.02%	n(14), 13.21%	n(7), 06.60%
2011/2012, n=95	n(0), 00.00%	n(17), 17.89%	n(63), 66.32%	n(12), 12.63%	n(3), 03.16%

Table 2b - Score Trend in Biochemistry MBBS Examination from 2007/2008 to 2011/2012 Academic Session (five years after the introduction of Post-UME-Screening test)

Academic Session	Grade A (70-100)	Grade B (60-69)	Grade C (50-59)	Grade F1 (40-49)	Grade F2 (00-39)
2007/2008, n=293	n(2), 00.68%	n(90), 30.72%	n(106), 36.18%	n(40), 13.65%	n(55), 18.77%
2008/2009, n=185	n(4), 02.16%	n(52), 28.11%	n(97), 52.43%	n(12), 06.49%	n(20), 10.81%
2009/2010, n=152	n(0), 00.00%	n(31), 20.39%	n(83), 54.61%	n(14), 09.21%	n(24), 15.79%
2010/2011, n=103	n(2), 01.94%	n(33), 32.04%	n(41), 39.81%	n(21), 20.39%	n(6), 05.82%
2011/2012, n=92	n(2), 02.17%	n(35), 38.05%	n(52), 56.52%	n(2), 02.17%	n(1), 01.09%

Table 2c - Score Trend in Physiology MBBS Examination from 2007/2008 to 2011/2012 Academic Session (five years after the introduction of Post-UME-Screening test).

Academic Session	Grade A (70-100)	Grade B (60-69)	Grade C (50-59)	Grade F1 (40-49)	Grade F2 (00-39)
2007/2008, n=296	n(8), 02.70%	n(74), 25.00%	n(112), 37.84%	n(32), 10.81%	n(70), 23.65%
2008/2009, n=186	n(2), 01.08%	n(40), 21.50%	n(88), 47.31%	n(24), 12.90%	n(32), 17.21%
2009/2010, n=151	n(6), 03.97%	n(44), 29.14%	n(66), 43.71%	n(19), 12.58%	n(16), 10.60%
2010/2011, n=102	n(5), 04.90%	n(51), 50.00%	n(31), 30.39%	n(9), 08.83%	n(6), 5.88%
2011/2012, n=92	n(0), 00.00%	n(14), 15.22%	n(54), 58.69%	n(21), 22.83%	n(3), 3.26%

Table 3a - Mean Percentage Score in Anatomy MBBS Examination Five Years Before and Five Years after the Introduction of Post-UME-Screening test.

Grades	Mean % Before PUME	Mean % After PUME	P-Value
A	00.96±0.20	01.38±0.83	0.349
B	16.82±1.79	22.84±7.48	0.202
C	42.55±2.67	46.34±5.50	0.262
F1	22.17±2.07	14.06±0.89 *	0.002
F2	17.51±2.38	15.38±6.24	0.388

*=P<0.05

Table 3b - Mean Percentage Score in Biochemistry MBBS Examination Five Years Before and Five Years after the Introduction of Post-UME-Screening test.

Grades	Mean % Before PUME	Mean % After PUME	P-Value
A	02.22±0.82	01.39±0.44	0.188
B	20.60±3.39	29.86±2.88 *	0.048
C	44.50±2.94	47.91±4.14	0.291
F1	13.57±2.23	10.38±3.12	0.219
F2	19.11±4.96	10.46±3.22	0.165

*=P<0.05

Table 3c - Mean Percentage Score in Physiology MBBS Examination Five Years Before and Five Years after the Introduction of Post-UME-Screening test.

Grades	Mean % Before PUME	Mean % After PUME	P-Value
A	00.57±0.27	02.53±0.90 *	0.037
B	11.72±0.49	28.17±5.92 *	0.026
C	42.47±2.81	43.59±4.74	0.419
F1	18.06±1.51	13.59±2.42 *	0.047
F2	27.18±3.71	12.12±3.73 *	0.034

*=P<0.05

Table 4a - Percentage pass and failure in Anatomy MBBS examination five years before the introduction of Post-UME-Screening test.

Academic Session	Pass	Failure
2002/2003, n=321	n(170), 53.00%	n(151), 47.00%
2003/2004, n=319	n(220), 68.96%	n(99), 31.04%
2004/2005, n=322	n(202), 62.73%	n(120), 37.27%
2005/2006, n=294	n(176), 59.86%	n(118), 40.14%
2006/2007, n=240	n(137), 57.08%	n(103), 42.92%

Table 4b - Percentage pass and failure in Biochemistry MBBS examination five years before the introduction of Post-UME-Screening test.

Academic Session	Pass	Failure
2002/2003, n=344	n(289), 84.01%	n(55), 15.99%
2003/2004, n=307	n(213), 69.38%	n(94), 30.62%
2004/2005, n=318	n(191), 60.07%	n(127), 39.93%
2005/2006, n=315	n(221), 70.16%	n(94), 29.84%
2006/2007, n=251	n(133), 52.99%	n(118), 47.01%

Table 4c - Percentage pass and failure in Physiology MBBS examination five years before the introduction of Post-UME-Screening test.

Academic Session	Pass	Failure
2002/2003, n=351	n(196), 55.84%	n(155), 44.16%
2003/2004, n=333	n(178), 53.45%	n(155), 46.55%
2004/2005, n=324	n(206), 63.58%	n(118), 36.42%
2005/2006, n=314	n(150), 47.77%	n(164), 52.23%
2006/2007, n=252	n(134), 53.17%	n(118), 46.83%

Table 5a - Percentage pass and failure in Anatomy MBBS examination five years after the introduction of Post-UME-Screening test.

Academic Session	Pass	Failure
2007/2008, n=283	n(129), 45.58%	n(154), 54.42%
2008/2009, n=182	n(139), 76.38%	n(43), 23.62%
2009/2010, n=158	n(105), 66.46%	n(53), 33.54%
2010/2011, n=106	n(85), 80.19%	n(21), 19.81%
2011/2012, n=95	n(80), 84.21%	n(15), 15.79%

Table 5b - Percentage pass and failure in Biochemistry MBBS examination five years after the introduction of Post-UME-Screening test.

Academic Session	Pass	Failure
2007/2008, n=293	n(198), 67.58%	n(95), 32.42%
2008/2009, n=185	n(153), 82.70%	n(32), 17.30%
2009/2010, n=152	n(114), 75.00%	n(38), 25.00%
2010/2011, n=103	n(76), 73.79%	n(27), 26.21%
2011/2012, n=92	n(89), 96.74%	n(3), 03.26%

Table 5c - Percentage pass and failure in Physiology MBBS examination five years after the introduction of Post-UME-Screening test.

Academic Session	Pass	Failure
2007/2008, n=296	n(194), 65.54%	n(102), 34.46%
2008/2009, n=186	n(130), 69.89%	n(56), 30.11%
2009/2010, n=151	n(116), 76.82%	n(35), 23.18%
2010/2011, n=102	n(87), 85.29%	n(15), 14.71%
2011/2012, n=92	n(68), 73.91%	n(24), 26.09%

Table 6a – Showing comparison between passes and failures in Anatomy MBBS examination five years before and five years after the introduction of Post-UME-Screening test.

	Mean % Before PUME	Mean % After PUME	P-Value
Passes	60.33±2.69	70.56±6.91	0.085
Failures	39.67±2.69	29.44±6.91	0.085

Table 6b – Showing comparison between passes and failures in Biochemistry MBBS examination five years before and five years after the introduction of Post-UME-Screening test.

	Mean % Before PUME	Mean % After PUME	P-Value
Passes	67.32±5.24	79.16±5.01	0.145
Failures	32.68±5.24	20.84±5.01	0.145

Table 6c – Showing comparison between passes and failures in Physiology MBBS examination five years before and five years after the introduction of Post-UME-Screening test.

	Mean % Before PUME	Mean % After PUME	P-Value
Passes	54.76±2.57	74.29±3.34 *	0.008
Failures	45.24±2.57	25.71±3.34 *	0.008

*=P<0.05

There was a significant increase in passes (Table 6c) and significant decrease in failures (Table 6c) after the introduction of Post-UME-Screening test.

DISCUSSION

Since the introduction of Post-UME-Screening test in 2005, questions have been arising as to whether the screening test will ensure quality and whether when the best students are admitted there will be better quality of graduates produced by the universities, having in mind other factors that affect student's performance. Ajaja in 2010 did a study on three years of Post-UME-Screening and its influence on Science Education Students' achievement in Delta State University, Abraka, and from the findings of his study he was of the opinion that Post-UME-Screening cannot do better than UME in influencing students' achievement and that the proponents of Post-UME-Screening may be wrong [1]. However, the results of this present study on medical students in the University of Benin is of the contrary opinion because we can clearly see that the performance of medical students in the second MBBS examination in Physiology improved after the introduction of Post-UME-Screening test and this is also an indication that the quality of medical students admitted into the medical school have also improved thereby proving the proponents of Post-UME-Screening to be correct. This present study is also in agreement with another study carried out in the Department of Microbiology, University of Port Harcourt which reported a positive correlation between Post-UME scores and performance in the first year of study [11]. Before the introduction of Post-UME-Screening test in 2005, a number of authors had expressed doubt as to the efficacy of using UME score as a major criterion for admission [2,3,4,5,6,7,8] and their observations were traced to lapses in the process of admission of candidates into universities in Nigeria through UME which was becoming characterized by examination malpractices [3,12]. This of course necessitated the call for an alternative method of admitting students into the nation's universities which eventually led to granting universities the power to conduct Post-UME-Screening tests. The question now is whether the screening exercise has been worthwhile.

CONCLUSION

From the findings in this study, it can be observed that the performance of 300 level Medical Students in the Second Professional MBBS degree examinations improved after the introduction of Post-UME-Screening test and we would like to advocate that the Post-UME-Screening tests as part of the criteria for being offered admission into Nigerian universities should be allowed to continue and that mechanisms should be put in place to improve the screening and ensure that it is not corrupted by examination malpractices.

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