ORIGINAL ARTICLE

ACADEMIC PERFORMANCE OF UNDERGRADUATE MEDICAL STUDENTS WITH AND WITHOUT PREPARATORY LEAVES IN THE EXAMINATIONS OF BASIC SCIENCES

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ABSTRACT

Objectives: To compare the academic performance of undergraduate medical students with and without preparatory leaves in the examinations of forensic medicine.

Material and Methods: The study was conducted at Rehman Medical College, Peshawar from June 2015 to September 2015, and comprised of 96 students of 3rd year MBBS. In this study academic performance of the students was compared by using SPSS in three examinations of forensic medicine on the basis of preparatory leaves. In end of module exam (EOME) there was no preparatory leaves; midterm exam has three while end of session exam (EOSE) consisted of one week preparatory leaves. Total six EOME were conducted during the session. The average of all six EOME was considered for comparison with midterm and EOSE. First the overall academic performance of the students was compared in three different examinations and then the students were divided into four different categories for further analysis. The categories were as follows; students who got (i) < 50% marks (ii) 50-69% marks (iii) 70-79% marks (iv) ≥ 80% marks. All the exams consisted of theory and practical examination while the theory paper was further divided into two components: part-I: Multiple choice questions (MCQs); single best answer type and part-2; short essay questions (SEQs). Structured key was provided to the examiners in order to eliminate the bias when the papers were evaluated.

Results: The results of the present study showed significant difference of p-value 0.001 when the students' academic performance was compared in end of module, mid-term and end of session examinations. When further pairwise comparison was made between EOME and midterm; no significant difference was found while a significant difference of P-value 0.001 was found when EOME was compared with EOSE. Similarly when midterm exam was compared with EOSE; a significant difference of p-value 0.01 was found.

When the academic performance of the students was compared on the basis of marks categories, the results revealed improvement in the categories of <50% and 50-69% while the category of those students who got ≥ 70% marks was least affected by the preparatory leaves.

Conclusion: Overall students' performance was improved academically when they were given preparatory leaves. However, the academic performance of the competent students (who got ≥70% marks in EOME) was good throughout and was least affected by the preparatory leaves.

Key words: Academic performance, Forensic medicine, Multiple choice questions, Short essay questions.

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INTRODUCTION

Globalization of the world and advancement of technology has great impact on human life. Education in this era is considered to be the initial and essential step for every human activity.[1] The importance of education is evident from the fact that every year the number of students getting admission in the schools, colleges and universities are increasing and similarly the number of academic institutes are also increasing day by day.

The attitude of people is usually more towards professional education as there is a common perception that professional education helps in getting good jobs. Different factors such as availability of technology, improved modes of transportation, opening of charity based schools by governmental and non-governmental organizations have really motivated people even in rural areas to get educated.[2] Academic performance of a student can be affected by a number of intrinsic and extrinsic factors. These factors can vary from personal capacity and interest of a student to the educational environment provided to him.[3]

Along with other factors, preparatory leaves for the students are also considered to be an important factor in determining the student's academic performance. It is usually assumed that academic performance is enhanced by preparatory leaves. During their active academic session they do study and learn various things but during preparatory leaves they study more devotedly. In addition to repeating the topics in preparatory leaves, students even try to learn those things which were missed during the academic session.

Some students believe that preparatory leaves have no significance in the academic performance as it not really matters how many the preparatory leaves are, they only study a couple of days before or even a night before the exams.[4] While the other students think that in normal routine of college they enjoy, roam here and there and pay little attention to studies. But they really start working hard during preparatory leaves. The students are becoming habitual in neglecting studies during the academic session and postponing it to preparatory leaves.[5]

Preparatory leaves are considered mandatory by some of the academic institutes in Pakistan while the others insist on no or minimum possible preparatory leaves. The uncertainty about the effect of preparatory leave on the academic performance of the students provided the drive for this study. This study will help the policy makers of the academic institutes to plan and design curriculum which favors much better academic performance of the students. Moreover, no work is done in this regard in our country.

MATERIAL AND METHODS

The present study was conducted at the department of forensic medicine, Rehman Medical College, Peshawar, from June 2015 to September, 2015. Students' confidentiality was maintained as the names of the students were not disclosed. Three different types of examination were compared; End of module examinations (EOME) which has no preparatory leaves; midterm examination having three preparatory leaves and end of session examination (EOSE) which has preparatory leaves of one week. The average of all six EOME was considered for comparison with midterm and EOSE. First the overall academic performance of the students was compared in three different examinations and then the students were divided into four different categories for further analysis. The categories were as follows; students who got (i) $< 50\%$ marks (ii) 50-69% marks (iii) 70-79% marks (iv) $\geq 80\%$ marks.[6] The distribution of students in the mentioned categories were based on the marks obtained in EOME and then the academic performance of the same category of students was followed and compared with midterm and EOSE. Similarly again the students were distributed in the mentioned categories based on the marks obtained in midterm examination and the academic performance of the same category of students was followed and compared with EOSE. All the exams consisted of theory and practical examination while the theory paper was further divided into two components: part-I: Multiple choice questions (MCQs); single best answer type and part-2; short essay questions (SEQs). All papers were designed and evaluated by the same teachers in order to avoid the examiner's bias. The difficulty level was same in all the examinations and the keys for SEQs were made in such a way that each part of question has a clear point for scoring. Total 96 students of 3rd year MBBS (session 2014-15) were included in the study. Those student who remained absent either in more than one EOME or who have not attended the midterm or EOSE were excluded from the study. Three students were found to be absent in different examinations so they were excluded from the analysis. Therefore, the analysis of this study is based on 93 students.

Statistical Analysis: After collection data was entered and analyzed by using SPSS 16.0 software. Mean and standard deviation were used as descriptive measures. Comparison between different examinations was done by ANOVA and Tukey's test which was used for post hoc analysis. P-value ≤ 0.05 was considered statistically significant.

RESULTS

The overall students' academic performance was better in EOSE; followed by mid-term and then by EOME and comparison of the three exams revealed significant difference as shown in Table 1. When further pairwise comparison was made between EOME and midterm; no significant difference was found with P-value 0.015 while a significant difference of P-value 0.001 was found when EOME was compared with EOSE. Similarly when midterm exam was compared with EOSE; a significant difference of p-value 0.01 was found.

The academic performance of the students was compared on the basis of marks categories as shown in Table 2, the results were as follows; <50% marks: significant difference was found when both EOME and midterm exams were compared with EOSE while the comparison of EOME with midterm exam was statistically insignificant; 50-69% marks: comparison of EOME with both midterm and EOSE showed significant difference and similarly comparison of midterm exam with EOSE also revealed significant difference; 70-79% marks: significant difference was found when

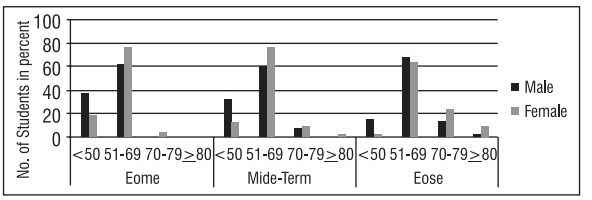

Figure 1: Comparison of male and female students in all exams on the basis of various marks categories

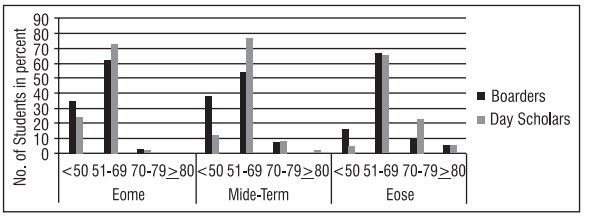

Figure 2: Comparison of boarder and day scholar students in all exams on the basis of various marks categories

Table 1: Marks of students in different exams (mean ± standard deviation)

Exam	Mean ± SD	P-value
EOME	53.5 ± 8.1	0.001
Midterm	55.6 ± 10.8	
EOSE	61.8 ± 10.1	

Table 2: Marks of students based on categories in different exams (mean ± standard deviation)

Study Group	Exams	Mean ± SD
Less then50	EOME	44.4 ± 0.9
	Mid-term	46.9 ± 2.1
	EOSE	53.7 ± 1.8
50 to 69	EOME	56.7 ± 0.6
	Mid-term	58.7 ± 0.9
	EOSE	64.6 ± 1.0
70 to 79	EOME	74.5 ± 0.5
	Mid-term	76.0 ± 7.0
	EOSE	81.0 ± 1.0
≥80%	Mid-term	81.3 ± 2.2
	EOSE	83.1 ± 1.4

EOME was compared with EOSE while the comparison of EOME with midterm exam and midterm exam with EOSE was statistically insignificant; ≥80% marks: as no student was found in this category in EOME, therefore comparison of EOME with midterm exam and EOSE cannot be performed, however the comparison of midterm exam with EOSE for this category showed insignificant difference (Table 3).

Table 3: Pairwise comparison of the academic performance of students in different categories

Study Group	(I) factor1	(J) factor1	P-value
< 50%	EOME	Mid-term	0.274
		EOSE	0.001
	Mid-term	EOSE	0.003
50-69%	EOME	Mid-term	0.017
		EOSE	0.001
	Mid-term	EOSE	0.001
70-79%	EOME	Mid-term	0.856
		EOSE	0.049
	Mid-term	EOSE	0.558
≥ 80%	Mid-term	EOSE	0.334

The academic performance of the students was also compared on the basis of gender (male & female) and residential status (boarder & day scholar). Comparison on the basis of gender showed better academic performance of female students as compare to their male counterparts in all the exams (Figure 1). Similarly day scholars were found better academically than boarders when the two groups were compared (Figure 2).

DISCUSSION

The current study represents the first study of comparing the academic performance of medical students in forensic medicine examinations with and without preparatory leaves. The students' academic performance was compared in three different examinations; EOME which has no preparatory leaves; midterm examination having three preparatory leaves and EOSE which has preparatory leaves of one week. Comparison revealed significant difference between EOME and EOSE while statistically no significant difference was found between EOME and midterm examinations.

Preparatory leaves were once thought to be one of the key components to perform better in the academics. It was believed that academic performance of students is strongly correlated to the number of preparatory leaves. But now with the changing trends in medical education some educationists and researchers consider it of minimal value. They are in favor of less or no preparatory leaves at all. They think preparatory leaves are least important for the students who study regularly throughout the academic session. Another group of people suggest preparatory leaves for those students who do not study properly during the academic session and leave everything to last days.

From the last few years in Pakistan the admission of students in medical schools has increased and most of the medical schools in Pakistan have tremendously improved the educational level, competence and skills. A lot of researches have been conducted in order to find out the factors playing role in academic performance.

Some have labelled teacher's education and teaching methods,[7] gender difference,[8] socio economic factor,[9] class environment[10] and family education background[11] while the others have mentioned class size,[12] class duration,[13] course schedules,[14] technology used in the class[15] and evaluation system,[16] extracurricular activities,[17] family and work activities[18] to affect significantly the academic performance of the students but no one has evaluated the role of preparatory leaves.

Preparatory leaves are considered to be of extreme importance by some students because they believe that doesn't matter how well and thorough one study during the active academic session still one needs preparatory leaves to revise the course. Revision helps learning to mature. In fact studying a unit or chapter well and then don't revising it will vanish the learning from first study with the passage of time.[18]

CONCLUSION

Overall students performed better academically when they were given preparatory leaves and it kept on increasing with increasing the number of preparatory leaves. However, the academic performance of competent students (who got ≥70% marks in EOME) was throughout good and least affected by the preparatory leaves.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Rehman KU: Idea and concept.
Faisal R: Designing study.
Shah MM: Data collection.
Khan MSG: Literature review.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.