Selection Procedure as Predictor of Performance in University Examination

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Abstract

Objective: To determine the correlation of SSC, HSC, ZMU achievement test and interview scores with the scores achieved in MBBS 1st, 2nd and 3rd Professional Examinations.
Method and Procedure: The SSC, HSC, ZMU admission test and interview scores of 159 MBBS students admitted in 1995, 1996 and 1997 were correlated with the scores of the 1st, 2nd and 3rd professional examinations. Data analysis was done on SPSS Software.
Results: No significant relationship was found between the SSC, HSC, ZMU admission test and interview scores and the scores obtained in the professional examinations. SSC scores did not correlate with any variables/matrices, whereas for batches I and 2 the HSC school leaving examination scores correlated significantly with ZMU interview score ($p<0.05$). No correlation was found between ZMU test and ZMU interviews. Results showed significant relationship($p<0.01$) between all 1st, 2nd and 3rd professionals of all three batches.
Conclusion: None of the admission criteria (SSC, HSC, ZMU admission test and interview scores) predict the performance of medical students in the professional examinations (JPMA 51:381,2001).

Introduction

The issue of selecting medical students has substantial importance to the community and the medical school as well as to prospective students. Medical colleges seek to admit applicants who can complete the academic requirements of the course, can perform well as practicing physicians and have the personal characteristics of physicians valued by members of the society[1].
Medical study and the process of gaining admission to medical school has long been a subject for discussion. The main selection criteria for entrants in medical colleges have been the scores of science subjects in school-leaving examinations. These requirements and the increased. competition for places among school leavers have resulted in successful applicants being selected from the top 1-3% of academic achievers[2,3].
Ziauddin Medical University (ZMU) established in 1995, expects its graduates to promote the advancement of knowledge in health sciences and to become skilled primary care physicians with the leadership potential for tackling health and related problems at individual, family and community levels.
According to the regulations of Pakistan Medical and Dental Council, admission is open for all individuals who have achieved 60% in HSC (Higher Secondary Certificate) examination. Candidates applying to ZMU are also required to take an admission test and interview. The weightage given to the different components includes secondary school certificate 10%, higher secondary certificate 15%, ZMU achievement test 50% and interviews 25%.
This study was done to determine if any correlation exists between SSC, HSC, A-levels, ZMU achievement test and interview scores with the scores achieved in University 1st, 2nd and 3rd professional examinations.

Method and Procedure

The study was cohort longitudinal. Independent variables or predictors included overall scores of SSC (10 years of secondary school certificate education), HSC (2 years of higher secondary school certificate education), ZMU admission test and three interviews. For the statistical analysis of the data the actual scores of 159 medical students from ZMU (Batch 1=45, Batch II =57, Batch III= 57) were organized to fmd out the correlation between overall SSC, HSC school leaving scores with ZMU admission test and interviews. GCE (4 students from batch 2) were excluded because of the problem of matching the GSE scores with SSC and HSC scores for statistical analysis.

The SSC, HSC, ZMU admission test and interview scores were correlated with scores achieved in university professional examinations held on completion of MBBS second, third and fourth year. The 1st professional was held at the end of second year while 2nd and 3rd professional examinations at the end of MBBS third and fourth year.

The scores of independent variables (SSC, HSC, ZMU Examination and Interview) were also compared with each other. Data analysis was done on Software package SPSS REL. 7.0 (Statistical Package of Social Sciences), for the correlation and ANOVA analysis at a significance level of 0.05 and 0.01 was adopted.

Results

The mean scores of SSC, HSC of the three batches are shown in Table 1.

Table 1. Mean and Standard Deviation scores of different components at the time of admission.

	Weightage (%)	Batch 1 Mean ± SD	Batch 2 Mean ± SD	Batch 3 Mean ± SD	P-Value
SSC	10	7.6 ± 0.5	7.7 ± 0.6	7.6 ± 0.5	0.345
HSC	15	10.1 ± 0.7	10.7 ± 0.7	10.1 ± 0.6	0.962
ZMU Test	50	19.6 ± 6.3	9.9 ± 6.3	6.8 ± 5.2	0.001
ZMU Interview	25	19.4 ± 3.3	24.0 ± 3.3	24.0 ± 3.5	0.001
Total (all four above)		56.8 ± 5.5	51.6 ± 5.5	48.4 ± 6.6	0.001

The mean scores of all the three batches are similar being 7.6, 7.7 and 7.6 respectively.

HSC scores and ZMU interview scores of batches 1 and 3 show significant correlation ($p < 0.05$). For batch 2 there is no correlation between HSC and ZMU interview scores (Table 2).

Table 2. Correlation between Students' academic examination scores and ZMU achievement test and interview.

	Batch 1 ZMU Entrance		Batch 2 ZMU Entrance		Batch 3 ZMU Entrance	
	Test	Interview	Test	Interview	Test	Interview
SSC	0.25	0.10	0.25	0.25	0.07	0.04
HSC	0.17	0.41*	0.01	0.17	0.07	0.32*

*Significant Correlation ($p<0.05$)

Table 3. Correlation between Students performance in professional examinations and selection components scores.

	Batch 1			Batch 2		Batch 3
	1st Prof	2nd Prof	3rd Prof	1st Prof	2nd Prof	1st Prof
SSC	0.32*	0.29	0.28	0.18	0.05	0.09
HSC	0.30*	0.37*	0.25	0.21	0.22	0.09
ZMU Test	0.47*	0.24	0.27	0.29	0.07	0.05
ZMU Interview	0.11	0.03	0.03	0.05	0.02	0.04
Total (all four above)	0.36*	0.16	0.19	0.25	0.03	0.06

Significant Correlation (*p<0.05)

Table 3 shows that the SSC, HSC, and ZMU test scores of batch 1 correlate with the 1st professional examination (r= 0.32, r= 0.30, r0.47 levels), while the HSC scores of batch 1 also correlate with the performance in the 2nd professional examination (r0.37). For batch 2 and 3 no significant correlation was found between the SSC, HSC and ZMU test scores and the scores of the professional examinations. For all three batches the interview scores do not show a correlation with perfonnance in professional examinations. performances on standardized tests taken in medical

Table 4. Correlation between the Professional Examination Scores of students.

	Batch1			Batch 2		Batch 3
	1st Prof	2nd Prof	3rd Prof	1st Prof	2nd Prof	1st Prof
1st Professional	-	0.61*	0.74*	-	0.73*	-
2nd Professional	-	-	0.76*	-	-	-

*Significant Correlation (p <0.01)

Table 4 shows the relationship between the professional examination of three batches. There is significant relationship between all 1st, 2nd and 3rd professional examination scores of all three batches and the level of significance is at <0.01. This relationship indicates that the performance of students in professional examinations correlates with each other.

Discussion

Results of present study show that none of the selection criteria (SSC, HSC, ZMU test and interview) predict the performance of the medical students in the professional examinations. Similar results have been reported by other authors reporting from western countries[4-7], Saudi Arabia[8] and Pakistan[9,10]. However, some previous studies have shown that standardized pre-medical college scores correlate with colleges[11,12].

An interesting correlation that has been found in this study for batches 1 and 3 is between the HSC scores and the interview scores. It is difficult to find an explanation for it as the three interviewers did not have the HSC scores with them during the interview. However as stated earlier neither of the two predict the performance in the professional examinations.

For the future there is a need for developing better selection criteria and more conceptual matrices need to be developed. Edward and colleagues[12] have suggested that future efforts to correlate interview with

clinical performance could be enhanced by structured clinical encounters. We also feel that a structured interview may have a positive role in the selection of the candidate. For this Ritzen M. et al[13]. have developed an admission procedure permitting selection of highly motivated medical students with personality characteristics appropriate for a future as practicing physicians. The medical graduates are expected to possess not only knowledge but also skills and attitudes to deal with common problems at individual, family and community levels routinely. One or two variables are unlikely to predict the performance of all the competencies that a physician needs.

In the present study a correlation has been found between all the professional examinations, It will be interesting to see if this correlation continues till the final examination, We hope to continue this study with other batches coming in as the number of students in this study are small.

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