

Factors affecting performance at the IBSS examination.

CT Hapuarachchi¹, NP Gunarathne¹, MDRP Goonathilak¹, A Jayawardena²

¹AL 2000 batch of students, Faculty of Medicine, University of Colombo

²Department of Community Medicine, Faculty of Medicine, University of Colombo

Abstract

Objectives: Describe the factors affecting performance at the IBSS examination and determine the association between these factors and student performance at the IBSS examination.

Method: A cross sectional descriptive study was carried out amongst 150 students of the AL 2003 batch, Faculty of Medicine, Colombo, using a pre-tested, self-administered questionnaire.

Results: Only 65.3% of the students passed the IBSS examination in their first attempt. 52% had gained university entrance from their first AL attempt; there was a statistically significant trend of failing the first attempt of the IBSS final examination as their AL attempt increases ($p < 0.05$). The majority of students (78.7%) studied mostly at home. A statistically significant association was found between the place of study and the performance at the IBSS examination ($p < 0.05$). An association between students' performance and gender was not observed. Of the students, 23.3% perceived English as a problem while 40% had personal problems adversely affecting their studies. There was no association between the above factors and students' performance at the IBSS.

A statistically significant association between regularity of attending lectures and performance at the IBSS examination was not found. Nor was there any statistically significant association between regularity of attending anatomy dissections and performance in Anatomy.

Conclusion: There is a greater likelihood of failing the first attempt of the IBSS examination as the AL attempt from which university entrance was obtained increases. Those who studied at home had a greater likelihood of passing the first attempt of the IBSS examination than those who studied mostly at faculty.

Introduction

Until 1995, the MBBS course of the Colombo medical faculty was a traditional discipline-based one with three major examinations, namely, the 2nd MBBS, the 3rd MBBS and the final MBBS examination.

In 1995, the MBBS curriculum was changed after six years of planning (1) to a more integrated and student centered one (2). The main objectives of the new curriculum were to reduce the content and quantum of teaching by lectures, to make learning more student centered and to address other issues (1).

The new curriculum of the MBBS course is organized into five streams; namely, the Introductory Basic Sciences Stream, the Applied Sciences Stream, the Community Stream, the Behavioural Sciences Stream and the Clinical Sciences Stream.

The main objective of the Introductory Basic Sciences Stream (IBSS) is to enable the student to acquire core knowledge in basic sciences. Seven subjects were taught from the inception until 2008: Anatomy, Physiology, Biochemistry, Pathology, Pharmacology, Parasitology, and Microbiology. The IBSS course including the main and repeat examinations were completed in the first five terms (1). The student's performance at this examination is crucial for his / her continued success as a medical undergraduate.

Likewise, the medical faculty of the University of Kelaniya has instituted a somewhat different change recently (3).

The "new" curriculum, being more student centered, encourages the students to learn on their own initiative. While this has certain advantages, it has been said that it puts greater stress on the medical student and adds to the burden of learning and coping with the manifold problems faced

when entering a university. A number of studies assessing the problems faced by new entrant medical students and their perception of the educational environment have been conducted at the Faculty of Medicine, University of Colombo.

One such study found that the majority of students are boarded and have problems at their current residence. With regard to their financial difficulties, none of the students had received money from the Mahapola Scholarship within the first three months at university (4). In another study, 45% of students questioned stated that tutorials put them under a lot of pressure whilst 60% were not fully satisfied with dissections (5).

English was perceived as a problem by 50% of students, of whom 94.5% faced communication problems and 70.1% found it difficult to follow lectures (4); 60% were not fully satisfied with their ability to communicate in English. Furthermore, 84% of the students had problems in reading textbooks (5). These findings give rise to grave concerns, especially as writing, speech and presentation skills in English affect the performance at the examinations (6). Writing skills especially were found to affect the results of the Introductory Basic Sciences Stream and the Community Stream. Of the students, 65% had stated that the Intensive English Course was either average or poor (6).

A study assessing the educational environment of the faculty using the Dundee Ready Education Environment Measure found that the students' perception of teachers, academic self perception, atmosphere and social self-perception were all below 70% (7). Only the student perception of learning scored 70%. The overall mean score of the educational environment was 72%. While this score was commendable, the authors observed that there was room for improvement of the educational environment in the faculty.

With regard to the "old" curriculum, it was found that the performance of the medical students at university correlated with the number of attempts at the University Entrance Examination (8). With the introduction of the "new" curriculum, the students' performance at university was found to correlate with performance at the GCE Advanced Level Examination. The authors had assessed student performance at university using the pass rates of the examinations of the Applied Sciences Stream, Behavioural Sciences Stream, Community Stream and Clinical Sciences Stream (8).

Performance at the IBSS examination was not taken into consideration. Students who failed the IBSS examination had a significantly lower Advanced Level mark or Z score (6). The possible relationship with the number of attempts at the GCE (AL) Examination and performance at the IBSS examination had not been assessed.

It is important to identify the factors affecting performance at the IBSS examination; this would help the students to optimize their results and would also assist the university authorities to improve the quality of medical education in the medical curricula.

This study is aimed at describing the factors that may affect the students' performance at the IBSS examination.

Methods

A cross sectional, descriptive study was carried out among the students of the Faculty of Medicine, University of Colombo. The batch that had completed the IBSS examination most recently, the AL 2003 batch was selected. A pre-tested, self administered questionnaire was distributed to all students who attended lectures on a selected day and all completed questionnaires (150) were collected. Students who were included in the AL 2003 batch from the senior batches and students who did not consent to fill the questionnaire were excluded from the study.

Performance at the IBSS examination was assessed on whether a student had passed or failed the first attempt of the IBSS examination. Similarly, performance in Anatomy was assessed on whether he/ she had passed or failed Anatomy at the first attempt. Data were processed using SPSS ver13.0 and analysis of data was done using the Chi square test.

Results

The study sample of 150 students was almost equally divided in gender, 50.7% being males. Of the students, 65.3% had passed the IBSS final examination in their first attempt. However, a statistically significant difference between performance at the IBSS final examination and gender was not observed.

The majority of students (52%) had gained entrance to the medical faculty from their first attempt at the A/L examination. (Table 1)

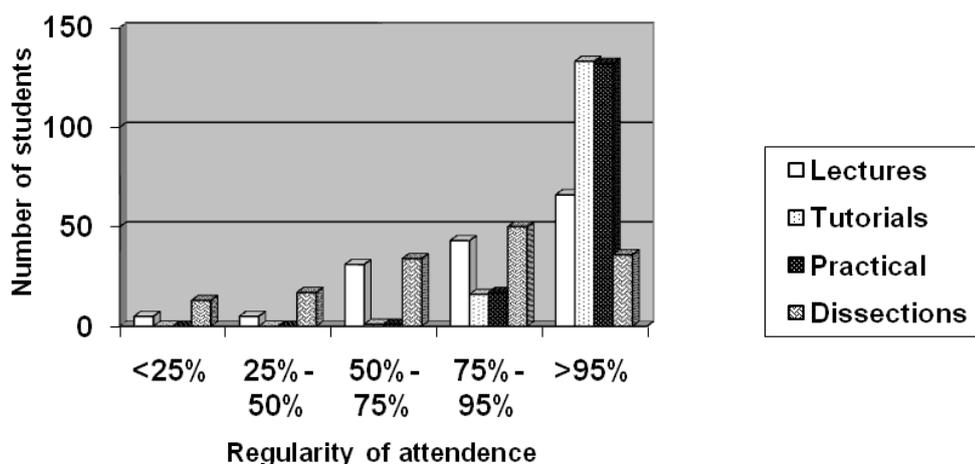
The majority of students had attended more than 75% of the lectures held. (Figure 1) However, there was no statistical significance between performance at the first attempt of the IBSS

examination and the regularity of attending lectures. Nor was there any statistical significance between the regularity of attending anatomy dissections and the performance in Anatomy.

Table 1: Distribution of the IBSS examination results according to the A/L attempt from which university entrance was obtained.

A/L attempt from which university entrance was obtained.	No. of students passing the IBSS examination in their first attempt (%)	No. of students failing the IBSS examination in their first attempt (%)	No. of total students (%)
1 st attempt	64 (82.1)	14 (17.9)	78 (100.0)
2 nd attempt	31 (50.8)	30 (49.2)	61 (100.0)
3 rd attempt	3 (27.3)	8 (72.7)	11 (100.0)
Total	98 (65.3)	52 (34.7)	150 (100.0)

Figure 1: Distribution of the students' attendance at various learning activities.



The majority of students (78.7%) studied mostly at home instead of at faculty (Table 2). A statistically significant difference was found between the place of study and the students' performance at the IBSS examination with the

students who study mostly at the faculty having a greater likelihood of failing the first attempt of the IBSS examination ($p < 0.05$) (Table 3).

Table 2: Distribution of places where the students had studied most

Place where student had studied most	Library	Canteen	Any other place at faculty	Home
No of students (%)	23 (15.3)	1(0.006)	8 (5.3)	118 (78.7)
Number passing the examination (%)	10 (6.7)	1(0.7)	5 (3.3)	82 (54.7)
Number failing the examination (%)	13 (8.7)	0 (0)	3 (2.0)	36 (24.0)

Table 3: Two by two table showing performance at the IBSS examination by the place where students had studied most

Place of study	Number passed	Number failed	Total
At faculty	16	16	32
At home	82	36	118
	98	52	150

Of the students, 40% admitted that they had personal problems which had adversely affected their studies: of these 5.3% of the students had financial problems, while 34.7% had other personal problems.

93.3% of the students had obtained distinctions for English language at the GCE

O/L examination. 6% had credits while just 1 student (0.6%) had obtained a simple pass. None had failed the English language subject (Figure 2).

23.3% of the students thought that their studies were adversely affected by their poor English language skills (Table 4).

Figure 2: Distribution of the students' perceived degree of competency in English Language skills

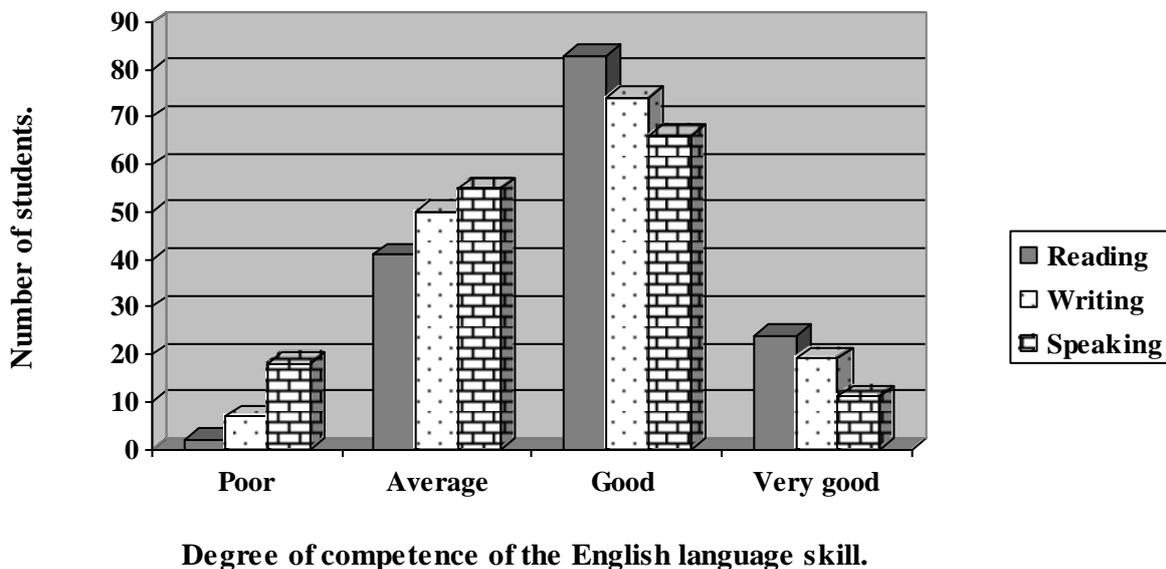


Table 4: Distribution of the student's perception of their competence of English language skills

	Number of students that passed the IBSS exam	Number of students that failed the IBSS exam
Number that perceived English as a problem (%)	20 (13.3)	15 (10.0)
Number that did not perceive it as a problem (%)	78 (52.0)	37 (24.7)
Total	98 (65.3)	52 (34.7)

Discussion

The study population of 150 medical students had males and females in almost equal proportions. Gender was not found to affect the performance at the first attempt of the IBSS final examination.

As with the “old” curriculum (8), it was found that the performance at the first attempt of the IBSS examination correlated with the number of attempts at the University Entrance Examination. Thus, students who failed the IBSS examination had a significantly lower Advanced Level mark or Z-score (6) and were more likely to have gained university entrance from their second or third AL attempt. The possible causes for these correlations need to be analyzed further: the students’ study techniques, their preferred types of learning, methods of time and stress management, their Intelligence Quotient and even Emotional Quotient may have a bearing on their examination performance.

Whilst most students had regularly attended lectures (Figure 1), this had not affected their performance at the IBSS final examination. Alternate means of acquiring the core knowledge, attending lectures without adequate self study or preparation for the examination, difficulties in following and understanding lectures etc. may have led to the above finding.

The students’ regularity of attending anatomy dissections was far less than that for lectures. However, a statistically significant association

was not found between regularly attending Anatomy dissections and the performance in Anatomy at the IBSS final examination.

The majority of the students (78.7%) studied mostly at home instead of at faculty. A statistically significant difference was found between the place of study and students’ performance at the IBSS examination with the students who study at the faculty having a greater likelihood of failing the first attempt of the examination (Table 3). This may be addressed by improving the educational environment of the faculty, as recommended by previous studies (7). However, 71.9% of the students who had studied mostly in the faculty had done so in the library. The possible causes for the above finding merit further research.

In spite of the extensive personal tutor and student counsellor programmes in place, 68.5% of the students in a previous study had not met their personal tutor after the first meeting (4). Furthermore, 40% of the students in one study admitted to having a personal problem adversely affecting their studies.

The problems faced by students in understanding and communicating in English, which were identified by previous studies (4,5,6) was corroborated in this study. The students were most confident about their English reading skills and least confident about their speaking skills. Previous studies have concluded that English skills affect results at the IBSS examination (6). This study

showed that 23.3% of students perceived the lack of English language skills as a problem. A higher failure rate was observed among such students. Nevertheless, a statistically significant association between the above mentioned perception and the performance at the IBSS final examination was not apparent (Table 4). Inability of either the investigators or the students to objectively assess their English language skills may have affected the above finding, in which case the marks obtained at the Intensive English Course could have been utilized for this purpose.

Conclusion

There is a greater likelihood of failing the first attempt of the IBSS examination as the A/L attempt from which university entrance was obtained increases.

Those who studied at home had a greater likelihood of passing the first attempt of the IBSS examination than those who studied at faculty.

There was no association between performance at the first attempt of the IBSS examination and the students' gender, regularity of attending lectures and perception of English Language skills as a problem, except that due to chance. Furthermore, there was no statistically significant association between the regularity of attending anatomy dissections and performance in Anatomy at the IBSS final examination.

References

1. Faculty of Medicine, University of Colombo. *Student handbook A/L 2000 Batch*. Colombo: Faculty of Medicine, Colombo; 2001.
2. Karunathilake I, Samarasekara D. Innovations in medical education curricula in Sri Lanka. *Proceedings of the 3rd Asia Pacific conference on medical curricula*; Singapore: 2006.
3. Bandaranayake RC. Selection of students to medical school. *Ceylon Medical Journal* 2005;50(2):41-43.
4. Malavige RL, Mathevarajah L, Mohotti GHNS. Description of the problems faced by the new entrants at faculty of medicine Colombo. *Proceedings of the Student Scientific Sessions, Nov 12-14, 2004, Faculty of Medicine, University of Colombo*; Colombo: 2004.
5. Galabada DP, Gamage DTK, Gallge TP. Study on some problems faced by the new entrants of the faculty of medicine Colombo. *Proceedings of the Student Scientific Sessions, Nov 12-14, 2004, Faculty of Medicine, University of Colombo*; Colombo: 2004.
6. Weerakkody RM, Jayawardene MAMM, Nandika PHD, Liyanage BA. How do skills in English affect the performance at education in the Faculty of Medicine. *Proceedings of the Student Scientific Sessions, Nov 12-14, 2004, Faculty of Medicine, University of Colombo*; Colombo: 2004.
7. Senevirathne RDA, Karunathilake I, Ponnampereuma G, Samarasekara D. New entrant students' perception of Colombo medical faculty educational environment. *Proceedings of the International Conference on Curriculum Change in Medical Schools, June 30 - July 3, 2002*; Colombo: 2002.
8. Wickramasinghe VP, Kudalugodaarachchi J, Lamabadusuriya SP, Kottahachchi D, Ajanthan R. The performance of 8 batches of medical students in the Faculty of Medicine, University of Colombo at different curriculums. *Proceedings of the International Conference on Curriculum Change in Medical Schools, June 30 - July 3, 2002*; Colombo: 2002.