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AN AUDIT OF THE BASIC CLINICAL SKILLS COURSE FOR MEDICAL STUDENTS

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ABSTRACT

The Basic Clinical Skills (BCS) course is a yearly introductory part of the medical and dental curricula of the College of Medicine University of Lagos, designed to teach clinical freshmen the art of history-taking and physical examination (PE). It is evaluated by an objective structured clinical examination (OSCE). We analysed the results of the end-of-course examinations held over 3 years, comparing candidate's scores at history-taking with those at PE stations in both paediatrics and surgery.

In each of the two disciplines, the candidates scored significantly lower marks at the PE stations when compared with the history stations. Of a maximum of 10 marks, the mean±SD history score was 6.5±1.4 among 528 candidates at 1056 sittings while the corresponding score in PE was 5.2±1.7, ($p<0.001$). Overall, 115 (21.8%) candidates of the 528 examined failed the BCS examination when marks at these two stations were pooled. While 55 (10.4%) failed in history-taking, 224 (42.4%) failed in PE. The difference in the pass rates between history-taking and PE was statistically significant.

While these results appear to support the popular opinion that verbal skills are easier to acquire than manual dexterity, there is need to devote more time, attention and resources to teaching of PE techniques in the medical school curriculum as the allotted period appeared too short for adequate learning. Since a good grounding in clerkship is paramount to the doctor's successful clinical career, teachers should recognise the slower pace at which trainees acquire PE skills and employ the wide range of innovative teaching techniques presently available at every opportunity to remedy this shortcoming.

KEY WORDS: ***Basic Clinical Skills, History, Physical Examination, Audit.***

IINTRODUCTION

Clinical skills learnt during training form the basis of a doctor's ability to conduct adequate and efficient clinical evaluations[1]. There has therefore been widespread support for the conduct of a formal introductory course aimed at teaching these important aspects of a freshman's medical career tool[2,3,4]. At the University of Lagos, the Basic Clinical Skills (BCS) course holds at the end of the 300 level year. It is the students' first major contact with real-life patients. During the four-week program, small number of students are made to rotate through Dentistry, Medicine, Obstetrics and Gynaecology, Paediatrics, Psychiatry and Surgery. The students' groups spend three days in each department. An extra day is set aside for revision in the various topics learnt. It is mandatory for students to attend this course and pass an end-of-course Objective Structured Clinical Examination (OSCE). Absent and unsuccessful candidates get a chance to repeat the course and examination later on in the medical school calendar. Teaching takes the form of intensive didactic lectures, bedside demonstrations and supervised hands-on experience. The venues for the latter two teaching modalities include outpatient clinics, inpatient wards and accident and emergency wards.

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Since the BCS course was introduced twelve years ago, there had been no audit of its performance as a tool for the learning of history-taking and physical examination (PE) among our trainees. We therefore decided to evaluate the performances of students at both history-taking and PE, comparing marks scored in each section with the other. We hoped the results of this work would help in future reviews of the curriculum and suggest ways of improving the teaching of this important course.

METHODOLOGY

We retrospectively reviewed candidates' scores in the Objective Structured Clinical Examination (OSCE), which concludes the Basic Clinical Skills course at the College of Medicine of the University of Lagos. The study period was January 1998 to February 2000. We analysed the scores obtained in 4 stations, viz: one history station in each of Paediatrics and Surgery and the one PE station in each of the same disciplines. This was because the same format of questions and examiners were used in the assessments over the 3-year period. Scoring was based on standardised checklists for history-taking and PE. A candidate scored full marks for correctly asking an appropriate question during history-taking or demonstrating an appropriate sign in PE. Half a mark was awarded for unsatisfactory performance and no marks were given for aspects not performed

(Appendix i-ii). The maximum score at each of the 4 stations was 10 and no penalty mark was awarded for wrong, inappropriate questions or elicited signs. The same checklist was employed for the 3 consecutive years. Only history-taking and PE skills were assessed. No emphasis was placed on actual diagnosis and patient management in this exercise. The data was analysed on SPSSò, an analytical statistical computer package. The means (SD) were compared using the Student's T-test while non-parametric variables were subjected to Chi-square analysis. Unless otherwise stated, a p-value of <0.05 was considered significant. Excluded were the marks scored in other stations where questions varied from year to year and or where multiple-choice questions had been employed for assessment.

Appendix i: **Check List: Surgery History Station**

History of Abdominal Pain

Duration
Location
Nature
Severity
Radiation
Periodicity
Relieving Factors
Aggravating Factors
Associated Symptoms
Bowel habits / Stools

Score 1 if well performed
½ if not satisfactorily performed
0 if not attempted
TOTAL: 10

Appendix ii: **Checklist for Paediatrics PE Station**

Examination of a 3½ year old child who has been coughing for the past 3 months

Establishes Rapport
General Inspection
Counts the Respiratory Rate
Looks for Peripheral lymphadenopathy: axilla, neck
Palpates for the Trachea
Palpates for Apex Beat
Percusses Adequately
Checks for Finger Clubbing
Other relevant examination e.g. looks for cyanosis

Score 1 if well performed
½ if not satisfactorily performed
0 if not attempted
TOTAL: 10

RESULTS

A total of 528 candidates took the examination over the three-year period. These consisted of 172 in 1998, 194 in 1999 and 162 candidates in 2000. The mean marks scored in the history and PE stations in each of Paediatrics and surgery are shown in Table I. The mean scores for history stations were significantly higher than those of PE in each of the years in both disciplines.

Table I: **Mean scores in history and PE over the study period**

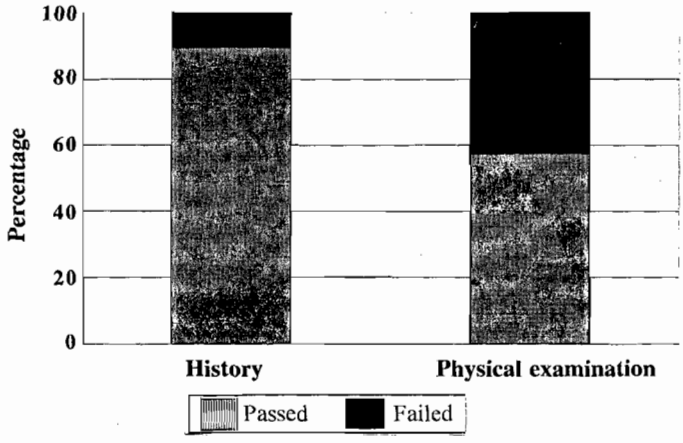
	Year	[N]	Mean Score±SD History	P.E.	P-value
Paediatrics	1998	172	6.5±1.5	4.3±1.5	<0.01*
"	1999	194	6.5±1.3	5.3±1.6	<0.01*
"	2000	162	6.5±1.6	4.1±1.4	<0.01*
TOTAL	**1998-2000**	**528**	**6.5±1.4**	**5.1±1.2**	**<0.01***
Surgery	1998	172	7.0±1.6	5.6±1.6	<0.01*
"	1999	194	8.1±1.0	4.7±0.9	<0.01*
"	2000	162	6.8±1.5	5.3±2.0	<0.01*
TOTAL	**1998-2000**	**528**	**7.4±1.5**	**5.2±1.6**	**<0.01***

**Significant*

All history marks scored in each of the two disciplines were pooled for the 3-year period. The same was done with PE scores. There were 528 marks overall. In Paediatrics, the mean±SD marks scored in the history and PE stations were 6.5±1.4 and 5.1±1.2 respectively while in Surgery, the scores were 7.4±1.5 and 5.2±1.6 for the history and PE stations respectively. The mean scores for history stations were significantly higher than those of PE in both Paediatrics and surgery in each of the three years ($p<0.01$). The result was no different when all history marks were pooled and compared with similar PE marks over the three year period. The mean pooled history score was 6.5±1.4 in 1056 stations while the corresponding mean score in PE was 5.2±1.7. ($p<0.01$)

Overall, 413 (78.2%) of all candidates passed the BCS examination. 473(86.6%) passed in history-taking while 304(61.6%) passed the PE stations. 115 (21.8%) candidates of the 528 examined failed the BCS examination at these two stations. While 55 (10.4%) failed in history-taking, 224 (42.4%) failed in PE. The difference in the pass rates between history-taking and PE was statistically significant when subjected to Chi-square analysis ($p<0.01$) (Figure 1)

Figure 1: **Pass Rate among Candidates at the end of the course OSCE (n=528)**



DISCUSSION

The OSCE format has been adjudged a valid tool in the evaluation of practical skills[5]. The results showed a good pass rate among participating students but higher failure rate of candidates at PE stations compared with history-taking. A uniform format was used in the clinical teaching and setting of questions in the two departments. The questions and examinations were comparable, assessing clerking skills of candidates in common clinical scenarios. The lower marks recorded by candidates at PE stations, with its implications on the quality of the end products of the training, should therefore be a pointer for corrective steps required for improvement. The findings possibly reflect the short learning period before evaluation in the subjects. The one-month period currently devoted to the teaching of all aspects of BCS would appear rather short. The course content and its mode of delivery as well as the ability of the students to learn the subject matter in the presently employed format may need to be modified to accommodate this reality in order to improve the quality of clinical skills among our medical students.

It is known that verbal skills are easier to acquire than manual dexterity. Competence in history-taking involves learning verbal communication in an easy-to-follow protocol. While medical literature is replete with suggestions on improvement of trainee doctors' communication skills, teaching of PE techniques has followed a more traditional method [6]. However, many reports have demonstrated the use of video-assisted feedback as helping students gain valuable insight into how to improve on their performance at interviews and PE[7-10]. These studies were unanimous in their conclusions, emphasising the need for educational feedback to individual students. The use of trained patients and simulators to promote active learning of clerking skills has also been similarly validated in a number of studies[11-13]. Others have employed 4th year students as preceptors for the first-year clinical candidates new at learning clinical skills. The exercise was reported as beneficial to all parties concerned, improving clerkship abilities of the trainees while remaining popular with students and faculty members alike[14-16]. These tested options should be explored and adapted into our local curricular. Similarly, pre-printed prompters have demonstrably led to improved performance in eliciting relevant information by trainees at clerking[17,18]. The use of computer-based programs in assisting trainee doctors is still largely developmental but highly promising[19,20]. It is hoped that with the ever increasing computing power of the microprocessor at cheaper costs, this all-embracing technology will enhance the teaching of basic skills to our trainees.

The need to devote more attention and resources to teaching of PE techniques in medical school curricula has been amply demonstrated by the findings in this study. Since a good grounding in clerkship is paramount to a successful clinical career, these results bear a message to clinical teachers and planners of medical school curricula to devote ample time, resources and efforts to the teaching of PE. This aspect should be emphasised at all points of contact with students through practice sessions, interactive teachings, audio-visual shows, pre-printed checklists and use of appropriate textbooks in PE formats.

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