# KNOWLEDGE RATHER THAN LANGUAGE PROFICIENCY AFFECTS ACHIEVEMENT SCORES IN INTERACTIVE OBJECTIVELY STRUCTURED PERFORMANCE EVALUATION

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**Background:** A common belief is that language proficiency might have affected the outcome scores of the Oral Structured Performance Evaluation (OSPE) especially at the interactive stations. The objective of this study was to explore this postulation. **Methods:** The subject of Behavioural Sciences was examined for the first time as a component of undergraduate medical curriculum in 2nd Professional Medical Examinations in 2007. Equal weightage was given to written and OSPE components in the examination. The OSPE scores in the interactive component of all (1457) candidates were compared with their written scores in the subject of Behavioural Sciences as well as their Higher Secondary School Certificate (HSSC) scores in the subject of English using Multiple Linear Regression Analysis in SPSS v.12. **Results:** Overall as well as in the Public Medical Colleges, relative to each other, knowledge of the subject as indicated by marks obtained in the written component of the examination exerted a positive and statistically significant ($p<0.05$), and command over language as indicated by marks obtained in the HSSC examination exerted a small positive but statistically insignificant ($p=0.231$ and 0.639 respectively) influence on the performance of students in the interactive OSPE component. In the private medical colleges command over language exerted a small negative but statistically insignificant ($p=0.936$) influence on the performance of students in the interactive OSPE component of the examination. **Conclusion:** Command over the subject content is the best indicator of achievement in OSPE.

**Keywords:** Objectively Structured Performance Evaluation, OSPE, Language Proficiency, Behavioural Sciences

## INTRODUCTION

The subject of Behavioural Sciences including, Medical Ethics & Law and Communication Skills is an important preclinical curricular component in the West[1] and has only just been introduced in Pakistan. After all, practice of medicine is said to be part clinical skill and part communication skill and empathy.[2,3]

Feasibility, reliability and validity of Objectively Structured Performance Evaluation (OSPE) examinations in Behavioural Sciences, like psychiatry, have been proven in the past.[4–6]

Urdu is our national language but English is the medium of instruction in postgraduate education. Furthermore there are a number of regional languages and dialects used in various parts of the country. The University of Health Sciences (UHS), Lahore has in total 13 Medical Colleges affiliated with it spread all over the province of Punjab which has an area greater than England. The examinees come from varied socio-economic and educational backgrounds. Not all of them have a good command over language, especially English as a foreign language. Nevertheless, communication skills play an important role in OSPE. Language proficiency can therefore affect the scores especially in the interactive OSPE stations.[7,8] This study was conducted to determine the relationship between the scores of the interactive OSPE component, overall command of the subject of Behavioural Sciences as determined by the scores of written examination and mastery over English language as determined by English Language scores in Higher Secondary School Certificate (HSSC) examination. Null Hypothesis that achievement in the interactive OSPE is not affected by command over the English language or command of the subject of Behavioural Sciences was tested.

## MATERIAL AND METHODS

In the UHS, Lahore, the subject of Behavioural Sciences was examined for the first time in Annual 2007 MBBS examinations. The examination technique included a 1-hour theory paper consisting of 45 Multiple Choice Questions and an (OSPE) examination held a few days later including 9 OSPE stations (4 interactive and 5 unobserved). Successful candidates required to obtain at least 50% marks in theory and OSPE separately. All OSPE questions were prepared at the University, complete with instructions for the Convener/Coordinator of OSPE examination, the observers (examiners) and the actors/real patients as well as an answer key in the form of a checklist for standardised rating.

In the year preceding the examination, both faculty and students were invited to several workshops on the methodology of OSPE examination and several real-time simulations were run to streamline the system and obtain valuable data which was used to further organise and perfect the evaluation process.

The written and OSPE was conducted simultaneously in all affiliated institutions and the same questions were used all over the province for standardisation. The interactive OSPE stations required communication with the examiner as well as the patient/actor for 5 minutes.

Study design was cross-sectional. All students (1457) from the 13 affiliated Medical Colleges who sat in the examination of Behavioural Sciences in 2nd Professional MBBS Annual 2007 examination were included in this study. The registration record of the students were scrutinised to obtain the marks secured by each student in the subject of English in HSSC Examination which were tabulated against their respective awards in the written and interactive OSPE components of Behavioural Sciences examination.

Data were analysed using SPSS 12.0. Parametric Multiple Linear Regression was applied and interpreted. Value of $p<0.05$ was taken as significant. Achievement Scores in the interactive OSPE was kept as the dependent variable and the HSSC Examination English scores and the Behavioural Sciences written scores were kept as independent variables.

## RESULTS

### Overall

Multiple regression was used, and the results include the adjusted R square (0.084), ANOVA ($p<0.05$) and the standardised Beta-coefficient of each component variable (Beta=0.287, $p<0.05$; Beta=0.030, $p=0.231$). Relative to each other, knowledge of the subject as indicated by marks obtained in the written component of the examination exerted a positive and statistically significant, and command over language as indicated by marks obtained in the HSSC Examination exerted a small positive but statistically insignificant influence on the performance of students in the interactive OSPE component of the examination.

### Private Medical Colleges

The results include the adjusted R square (0.022), ANOVA ($p<0.05$) and the standardised Beta-coefficient of each component variable (Beta=0.166, $p<0.05$; Beta=-0.004, $p=0.936$). Relative to each other, knowledge of the subject as indicated by marks obtained in the theory component of the examination exerted a positive and statistically significant, and command over language as indicated by marks obtained in the HSSC Examination exerted a small negative but statistically insignificant influence on the performance of students in the interactive OSPE component of the examination.

### Public Medical Colleges

The results include the adjusted R square (0.084), ANOVA ($p<0.05$) and the standardised Beta-coefficient of each component variable (Beta=0.292, $p<0.05$; Beta=0.013, $p=0.639$). Relative to each other, knowledge of the subject as indicated by marks obtained in the theory component of the examination exerted a positive and statistically significant, and command over language as indicated by marks obtained in the HSSC Examination exerted a small positive but statistically insignificant influence on the performance of students in the interactive OSPE component of the examination.

**Table-1: Multiple regression analysis**

| | Adjusted R square | ANOVA | Independent Variables | Beta | *p* |
|---|---|---|---|---|---|
| Private Medical Colleges | 0.022 | $p<0.05$ | Behavioural Sciences Written Score | 0.166 | <0.05 |
| | | | HSSC English Score | -0.004 | 0.936 |
| Public Medical Colleges | 0.084 | $p<0.05$ | Behavioural Sciences Written Score | 0.292 | <0.05 |
| | | | HSSC English Score | 0.013 | 0.639 |
| Overall Combined | 0.084 | $p<0.05$ | Behavioural Sciences Theory Score | 0.287 | <0.05 |
| | | | HSSC English Score | 0.030 | 0.231 |

The analysis indicates that in private as well as in public medical colleges affiliated with the UHS, Lahore, the greatest influence on the outcome scores of the interactive Oral Structured Performance Evaluation in Behavioural Sciences was exerted by the depth of theoretical knowledge. In private medical colleges, a higher HSSC score in English Language exerted a negative but statistically insignificant influence and in public medical colleges a higher HSSC English Language score exerted a positive but statistically insignificant influence on the scores of the interactive OSPE component of Behavioural Sciences examination.

# DISCUSSION

Oral Structured Performance Evaluation is a feasible, valid and reliable examination tool.[4] This tool has been utilised in measuring the clinical competence of students especially in the subject of Behavioural Sciences like Psychiatry with good effect.[5] The subject of Behavioural Sciences was examined in the 2nd Professional MBBS examinations for the first time in 2007 integrating the teachings of biological and medical/dental sciences with the knowledge of psychology, sociology and anthropology and thus facilitating the future doctors in having a holistic and a humanistic approach towards their patient.[9]

Gender, age, language and prior communication skills training are related to communication skills performance and the relationship between communication skills proficiency and clinical knowledge application is important in determining the outcome scores of the OSPE.[10] The recognition of this

relationship has led to setting up of minimum standards of language proficiency when students and doctors immigrate abroad to study and practice.[11] Chur-Hansen *et al*, in their study identified that unsatisfactory spoken language fluency was associated with poorer performance in medical communication skills under examination conditions.[12] In the examination system of the UHS, 50% weightage is given to the oral/practical examination in which communication with the patient and the examiner plays a significant role in the outcome measures. According to the Regulations of Examinations (2004)[13] of the University, failure in this component of the examination results in the candidate being declared 'FAIL' even if the theory component of the examination has been successfully cleared. A positive correlation between IQ and language proficiency has also been identified.[14]

Haq *et al*[8] identified that students of Asian origin, of both genders, educated in the UK, using English as their first language, continue to perform less well in Oral Structured Clinical Examinations and written assessments than their white European peers. In Pakistan access to medical education is controlled through merit based on the scores of the HSSC Examination and the National Testing System scores. The medium of both these examinations is English which is not the national language of Pakistan. Furthermore, students gaining access to medical education come from varied educational and socioeconomic backgrounds. Educationally students come from either private or state-run public Higher Secondary Schools/Colleges with varying levels of proficiency in English Language. Private college students have greater English language proficiency. Parkhurst[15] suggested that an oral communication course targeted to students whose first or best language was not English resulted in improved mastery of course outcomes and thus improved oral communication skills. As with any language acquisition process, continued practice is required to maintain proficiency.

In our examination system we have largely used clinicians' role-modelling as patients in the OSPE. This is because of the sheer volume-load of students being examined. It was believed that the use of patients would have added to patient stress and the fact that a number of studies have proven the value of patient simulation modellers and trained standardised patients in identical situations.[16]

Our study is unique with regard to its findings. Irrespective of past educational/ socioeconomic background, students with greater knowledge of the subject have scored better in the interactive component of the Behavioural Sciences OSPE. In fact students of private medical colleges, believed to have greater proficiency in English because of their educational background of private Higher Secondary School enrolment, were influenced negatively (but statistically insignificant) by their HSSC English Language scores. This is in contrast to previous reports regarding this subject.

We believe that these findings are because of the degree of standardization of the OSPE examination in Behavioural Sciences at the UHS, eliminating rater and patient bias as well as other factors like language proficiency. The checklist of awards emphasized on both verbal and non-verbal communications and the ability of the examinee to build trust and rapport with the patient allowing the patient to feel comfortable in discussing his/her problems.

## CONCLUSION

The study indicates that a standardised Objectively Structured Performance Evaluation can assess the competency of the examinees without being influenced by factors like Language Proficiency. Command over the subject content is the best indicator of achievement in such an examination. This helps dispel the myth that such examinations in 3rd world countries benefit students belonging to better educational and socioeconomic backgrounds.

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