

# Changing Objective Structured Clinical Examinations Stations at Lunchtime During All Day Postgraduate Surgery Examinations Improves Examiner Morale and Stress

Peter A. Brennan, MD, FRCS,\* Duncan S. Scrimgeour, MRCS,\* Sheena Patel, BDS,<sup>†</sup> Roshnee Patel, BDS,<sup>†</sup> Gareth Griffiths, FRCS,<sup>‡</sup> David T. Croke, PhD, FRCPath,<sup>§</sup> Lee Smith, BA(Hons),\* and Richard Arnett, PhD<sup>§</sup>

\*ICBSE, The Royal College of Surgeons of England, London, UK; <sup>†</sup>Maxillofacial Unit, Queen Alexandra Hospital, Portsmouth, UK; <sup>‡</sup>Intercollegiate Surgical Curriculum Project, London, UK; and <sup>§</sup>Royal College of Surgeons in Ireland, Dublin, Ireland

**BACKGROUND:** Human factors are important causes of error, but little is known about their possible effect during objective structured clinical examinations (OSCE). We have previously identified stress and pressure in OSCE examiners in the postgraduate intercollegiate Membership of the Royal College of Surgeons (MRCS) examination. After modifying examination delivery by changing OSCE stations at lunchtime with no demonstrable effect on candidate outcome, we resurveyed examiners to ascertain whether examiner experience was improved.

**METHOD:** Examiners ( $n = 180$ ) from all 4 surgical colleges in the United Kingdom and Ireland were invited to complete the previously validated human factors questionnaire used in 2014. Aggregated scores for each of 4 previously identified factors were compared with the previous data. Unit-weighted  $z$ -scores and nonparametric Kruskal-Wallis methods were used to test the hypothesis that there was no difference among the median factor  $z$ -scores for each college. Individual Mann-Whitney-Wilcoxon tests (with appropriate Bonferroni corrections) were used to determine any differences between factors and the respective colleges.

**RESULTS:** 141 Completed questionnaires were evaluated (78% response rate) and compared with 108 responses (90%) from the original study. Analysis was based on 26 items common to both

studies. In 2014, the college with the highest candidate numbers (England) was significantly different in 1 factor (stress and pressure), compared with Edinburgh (Mann-Whitney-Wilcoxon:  $W = 1524$ ,  $p < 0.001$ ) and Glasgow colleges (Mann-Whitney-Wilcoxon:  $W = 104$ ,  $p = 0.004$ ). No differences were found among colleges in the same factor in 2016, Kruskal-Wallis: ( $\chi^2(3) = 1.73$ ,  $p = 0.63$ ). Analysis of responses found inconsistency among examiners regarding mistakes or omissions made when candidates were performing well.

**CONCLUSION:** After making changes to OSCE delivery, factor scores relating to examiner stress and pressure are now improved and consistent across the surgical colleges. Stress and pressure can occur in OSCE examiners and examination delivery should ideally minimize these issues, thereby improving morale is also likely to benefit candidates. (J Surg Ed ■■■■■). © 2017 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

**KEY WORDS:** postgraduate surgery examination, OSCE, morale, human factors, stress, examiner

**COMPETENCIES:** Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, System-Based Practice

## INTRODUCTION

The importance of human error as a major cause of accidents in aviation is well known, with recognition and teaching

*Correspondence:* Inquiries to Peter A. Brennan, MD, FRCS, ICBSE, The Royal College of Surgeons of England, 35/43 Lincoln's Inn Fields, London WC2A 3PE, UK; fax (239) 228-6089; e-mail: Peter.brennan@porthosp.nhs.uk

significantly improving air safety in recent years.<sup>1,2</sup> Several factors, common to both pilots and health care professionals such as team working,<sup>3</sup> communication,<sup>4,5</sup> leadership,<sup>6</sup> stress, fatigue, and burnout are crucial in minimizing human error.<sup>7-10</sup> Human failure itself can be broadly categorized into the following 4 main levels or domains: organizational influences, unsafe supervision, preconditions to unsafe acts, and the unsafe act itself.<sup>11,12</sup> The Human Factors Analysis and Classification System (HFACS), widely used to assess these domains, has been adapted for use in medicine to include both active failures, namely decisions, attitudes, or actions of individuals, and latent failures resulting from errors occurring in an organization.<sup>11,12</sup> The well-known Swiss cheese model occurs when deficiencies occur across all 4 levels to cause an error or adverse incident.<sup>13</sup> Surprisingly, there is little research information available on the extent that human failure could play in an objective structured clinical examination (OSCE) situation.

OSCEs are widely used to minimize variability, thereby providing assessment consistency for candidates. Little is known about the effect of human factors (HF) on examining and marking. OSCE examiners have to concentrate for long periods, and endure much repetition by examining the same station time and again, leading to possible fatigue and boredom. A recent publication demonstrated that the ability to concentrate decreased and fatigue increased over time during an OSCE.<sup>14</sup> A study of undergraduate medical OSCE found no evidence that examining duration in a communication OSCE bay influenced the marks awarded,<sup>15</sup> whereas another showed that differential rater function over time was a significant factor potentially compromising marking reliability and validity.<sup>16</sup>

Little has been published on the effect of other factors (broadly categorized under the HFACS domains), in influencing examiner performance during OSCE.

We recently evaluated the possible influence of HF in the high-stakes postgraduate Membership of the Royal College of Surgeons (MRCS) examination, a requirement to enter higher surgical training in the United Kingdom,<sup>17</sup> with approximately 2000 candidates sitting this examination every year.

A questionnaire based on the 4 HFACS domains was designed and statistically validated, followed by factor analysis, which revealed 4 main factors or domains accounting for the variance in participants' scores.<sup>17</sup> One of these identified factors termed "stress and pressure" was found to be significantly higher in examiners from a surgical college compared with 2 other colleges in the study. This finding matched the situation known in the colleges at the time of data collection, with that college having far greater candidate numbers than the other 2 studied.<sup>17</sup>

As a result, changes were made to the OSCE by the Intercollegiate Committee for Basic Surgical Examinations, the regulatory body responsible for the development quality of MRCS in the United Kingdom and Ireland, giving all 4 colleges the option to change examiner stations at lunchtime and providing a longer lunch break (40 min rather the 20 min allowed previously) for rest and familiarization of

the new station. The actual break to eat lunch and rest is probably closer to 30 minutes as examiners have to check over their new station, including examining patients and confirming physical signs or histories in the communication scenarios. Therefore, realistically the break has only been usefully increased for examiners by an additional 10 minutes. The Royal College of Surgeons of England adopted this policy in 2015, and the Edinburgh College use it depending on candidate numbers, whereas the other 2 colleges (Glasgow and Ireland) did not feel the need to do so owing to fewer candidate numbers. A breakdown of the MRCS OSCE structure is shown in Table 1. Each station lasts for 9 minutes followed by a 1-minute break to enable candidates to move to the next scenario, and examiners to record their marks.

We recently published the results of more than 18,000 candidate-examiner interactions finding that candidate outcome and overall pass marks were not significantly different in OSCEs, whether the examiner cohort had changed stations at lunchtime or not.<sup>18</sup> The examiner:candidate ratio does not change during the MRCS OSCE circuit, as each candidate passes through all of the 18 stations and meets each examiner only once. Examiners will usually examine for a maximum of 2 days at a time at their respective College, after which time a new cohort of examiners take over should that college have more candidates. For example, although the English College sometimes has to run the examination over a 2-week period owing to the large number of candidate applications, this should not adversely affect individual examiner performance.

In this study, we resurveyed examiners to determine if the previously identified stress and pressure issues had improved after the changing station at lunchtime option, and whether any other HF issues were apparent in MRCS examiners.

## MATERIALS AND METHODS

180 Examiners involved in the February 2016 examination were invited at the examiner briefing before the OSCE to

**TABLE 1.** Breakdown of the MRCS OSCE. There are a Total of 18 Stations in 2 Broad Domains. Candidates Have to Pass Both Sections to Pass the Examination

Broad Content Area	Content Area	Number of Stations
Knowledge	Anatomy	3
	Surgical pathology	2
	Data interpretation	2
	Critical care	1
Skills	Giving and receiving information (communication skills)	2
	History taking	2
	Physical examination	4
	Procedural skills	2
	Total	18

Download English Version:

<https://daneshyari.com/en/article/8834969>

Download Persian Version:

<https://daneshyari.com/article/8834969>

[Daneshyari.com](https://daneshyari.com)