Practical Skills Evaluation of Medical Students with a Mini-Objective Structured Practical Examination (OSPE) for Nosocomial Infections

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ABSTRACT

Evaluation is the driving force promoting learning in medical students who are mostly ‘exam oriented.’ Doctors play an important role in spreading nosocomial infections due to noncompliance with preventive measures. This could stem from lacunae in the traditional system of education wherein certain practical skills aren’t evaluated. In this study, an innovative mini OSPE (Objective Structured Practical Examination) for nosocomial infections was designed and implemented for post teaching evaluation of practical skills such as hand washing and safe hospital waste disposal. Seventy eight students, divided into two cohorts were evaluated after they underwent the traditional method of lecturing or hands on small group teaching. The mini OSPE demonstrated a significant increase in acquisition of practical skills in the cohort which underwent small group teaching as compared to the one which underwent traditional teaching. Within the small group teaching cohort, the scores improved in the late phase as compared to the early phase, the difference being statistically significant. Innovative techniques such as mini OSPE are valuable tools of evaluation and should be incorporated in the curriculum of para clinical subjects. When applied to important topics such as Nosocomial infections, this can help enhance learning and retention of practical skills with better application to future clinical practice.

Keywords: Evaluation, Learning in the Medical Field, Medical Students, Mini Objective Structured Practical Examination (OSPE), Nosocomial Infections

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INTRODUCTION

Evaluation is an integral part of medical education. Being closely linked with educational objectives, its key purpose is to ensure learning followed by judging whether a student is adequately equipped with the theoretical background and the practical dexterity needed for optimum patient care (van der Vleuten & Schuwirth, 2005). In fact, educationists have noted that assessment drives learning and time on improving assessment will be richly repaid in terms of students emerging as better learners (Barman, 2005; Prozesky, 2001).

Most medical schools in India, follow the traditional method of teaching and evaluation. This is more of a teacher centered training in which knowledge and skills are imparted to students in a passive manner through lectures and practical demonstrations (Supe, 1996). The fact that over a period of time, basic sciences instruction has emphasized on rote learning of unrealistic volumes of factual material with inattention to practical application of this knowledge to clinical situations, has been a matter of much discussion (Ling, Swanson, Holtzman, & Bucak, 2008; Mehta, 1996). Concomitantly, other authors have also observed that the evaluation system in basic sciences is centered on primary recall of isolated basic science facts with little clinical relevance (Norcini & McKinley, 2007). The current trend however, in many countries is to follow innovative techniques with emphasis on the application of knowledge in basic sciences to clinical problems (Ling et al., 2008).

In the subject of Microbiology, which is taught to students in the second year of medical undergraduate studies in India, traditional teaching and evaluation have been to a great extent, ‘organism oriented.’ Kanungo (2003) has emphasized on the revamping of the Microbiology curriculum with inclusion of applied and patient oriented subject content, rather than ‘organism targeted’ reading material. A good example where the practical skills should be taught in context with knowledge of basic sciences is the topic of ‘Hospital acquired Infections’ or ‘Nosocomial Infections’. It is a well-established fact that health care workers including doctors play a key role in spreading these infections. A lack of compliance in adhering to good hand washing practices and safe hospital waste disposal are considered to be the main factors responsible for this (Guilhermetti, Hernandes, Fukushigue, Garcia, & Cardoso, 2001; Hegde, Kulkarni, & Ajantha, 2007; Qayyum, Waqas, & Sattar, 2010; Yadav, 2001). In the existing curriculum, the topic of nosocomial infections is taught through a didactic lecture on facts related to the etiology, pathogenesis and control measures. However there is neither a module which involves practical training of students to acquire skills of hand washing and waste disposal, nor any method to evaluate these skills. The evaluation of knowledge regarding nosocomial infections is therefore a matter of chance depending on questions in this topic appearing in the theory paper, while practical skills are not evaluated at all. This creates a big lacuna in the formative years of undergraduate studies, as the students are likely to underestimate the importance of these preventive measures. A likely outcome is noncompliance to proper hand washing and safe waste disposal in their future clinical practice, leading to the spread of nosocomial infections rather than to their prevention.

Therefore an immense need to introduce an innovative methodology to train and evaluate second year undergraduates for acquisition of practical skills for the prevention of nosocomial infections was felt. An Objective Structured Practical Examination (OSPE) was thought to be best suited for a systematic assessment of various steps involved. This was described in 1975 and in greater detail in 1979 by Harden and his group from Dundee and has become a popular tool for evaluation with the inherent advantages of being a practical, reliable and valid alternative for objective assessment of practical skills (Harden, Stevenson, Wilson, & Wilson, 1975; Harden & Gleeson,1979). A literature search did not yield any information on designing of OSPE stations for skills involved in prevention of Nosocomial infections. The purpose of this study was therefore, to design and implement a mini- OSPE for evaluation of
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