

Assessment of Medical Graduates Competencies

Dear Editor,

Medical professional proficiency comprises a set of skills, knowledge, and attitudes necessary to efficiently accomplish the practice of medicine.¹ The major aim of undergraduate medical education in the region is to produce doctors who are competent and able to meet the health needs of the community while also being capable of continuing medical education.² Have the medical schools lived up to their expectations? The answer is not entirely positive.³ Medical school provides the educational experiences necessary for the acquisition of minimum essential competencies in their graduates regardless of where they received their general medical education.⁴ To a large extent clinical competencies are acquired after qualification, from actual experience in managing patients throughout the career of a doctor.^{5,6} High quality medical education is central to high quality medical care.⁷ Assessment of clinical competence is an important part of curricula to satisfy national requirements, to maintain professionalism and to ensure that graduates are prepared for independent clinical practice.⁸ Competence assessment is also an important aspect of certification and is likely to be a part of physician licensure.^{9,10} Competency-based education bridges the gap between education and practice.¹¹ Universiti Kebangsaan Malaysia (UKM) is the second public university in Malaysia, the medical faculty of which produces doctors to attend to the health needs of the community. The objective of this paper was to identify the competencies of house officers of UKM aimed at continuous review and development of the curriculum.

Materials and Methods

This is a cross-sectional study carried out among 55 UKM medical graduates of academic session 2003-2004 and 2004-2005. Data were collected using a mixed type of questionnaire containing different attributes of competencies. Questionnaires were mailed through the academic office to the home addresses of graduates during their house jobs at different hospitals in Malaysia. Perception of their medical, surgical, obstetrical and paediatric competencies was noted. Data were then compiled and analysed as number and percentage distribution.

Results

This study showed that all respondents were always competent in performing catheterisation of the urinary bladder. In procedures like arterial blood taking, amniotomy, scrubbing for surgery, nasogastric tube insertion and

cardiopulmonary resuscitation, 96%, 93%, 91%, 78%, and 78% respondents respectively showed always competent. For procedures such as endotracheal intubation, manual removal of the placenta, lumbar puncture and exchange transfusion, the percentage of house officers always competent in performing the procedures was 40%, 36%, 18% and 18% respectively (Table 1).

Most of the respondents (89%, 73% and 71% respectively) have completed 3 major postings in Obstetric and Gynaecology (O & G), Surgery and Medicine during data collection period, while 31% and 27% of the respondents have completed postings in Paediatric and Orthopaedic respectively (Table 2).

Discussion

Competence-based forms of curricular development and assessment of competencies are replacing more traditional methods in many professions.¹² Evaluation of the competencies of the UKM medical graduates halfway during their housemanship showed that 91% to 100% were always competent in performing common procedures such as catheterisation of urinary bladder, arterial blood drawing for gas analysis, amniotomy and scrubbing for surgery. Seventy-eight per cent of the graduates claimed to be always competent in insertion of the nasogastric tube and cardiopulmonary resuscitation (Table 1). Competency in cardiopulmonary resuscitation seems to be unsatisfactory as it is a life-saving procedure and hence graduates need to pay more attention to learn about this procedure.

Knowledge of endotracheal intubation is essential in all major postings. Although more than 70% of the respondents had completed 3 major postings in Medicine, Surgery and O & G (Table 2), the results revealed that only 40% of respondents claimed that they were always competent in performing this procedure. This may be due to the fact that the procedure is not very often performed by junior doctors. It is usually done by senior medical officers or specialists. This study also revealed that although 89% of respondents had completed their O & G posting (Table 2), only 36% of respondents were always competent and 47% occasionally competent in manual removal of the placenta. This procedure is needed when the placenta does not come out normally through the control cord traction within half an hour of delivery of the baby. The findings on endotracheal intubation and manual removal of placenta raise the argument on whether these 2 procedures are core competencies for a house officer or procedures for more senior doctors.

Table 1. Distribution of Competencies of UKM Medical Graduates

Procedures	Always competent n (%)	Occasionally competent n (%)	Not competent most of time n (%)	Never done n (%)
Urinary bladder catheterisation	55 (100)	0 (0)	0 (0)	0 (0)
Arterial blood drawing	53 (96)	2 (4)	0 (0)	0 (0)
Amniotomy	51 (93)	3 (5)	1 (2)	0 (0)
Scrubbing for surgery	50 (91)	5 (9)	0 (0)	0 (0)
Insertion of nasogastric tube	43 (78)	12 (22)	0 (0)	0 (0)
Cardiopulmonary resuscitation	43 (78)	11 (20)	0 (0)	1 (2)
Endotracheal intubation	22 (40)	27 (49)	3 (5)	3 (5)
Manual removal of placenta	20 (36)	26 (47)	7 (13)	2 (4)
Lumber puncture	10 (18)	26 (47)	10 (18)	13 (24)
Exchange transfusion	10 (18)	21 (38)	11 (20)	13 (24)

Table 2. Distribution of Completion of Posting of the Graduates

Posting completed	n (%)
Obstetric & Gynaecology	49 (89)
Surgery	40 (73)
Medicine	39 (71)
Paediatric	17 (31)
Orthopaedic	15 (27)

Lumbar puncture is a frequently performed procedure during Paediatric posting; so is exchange transfusion but not as frequent. Paediatric posting was completed by only 31% of respondents (Table 2), which may be one of the causes of poor level of full competencies in doing lumbar puncture (39%) and exchange transfusion (26%) (Table 1). A similar study in the International Medical University (IMU) among final semester medical students showed that majority of the respondents were not confident in lumbar puncture and other paediatric procedures which have similarities to our own findings.¹³ Moreover, there remains the question whether the procedure of exchange transfusion is a task for the house officer or senior medical officers.

Discussions about competence-based education are occurring at all levels of medical education: medical school, residency, and continuing education. Many studies showed that a substantial number of newly-qualified interns perceived their own competencies in basic procedures as not adequate.^{5,14} Even for resident doctors with some experience, there is a large variation in proficiency in practical procedures¹⁵ with persistent deficits in certain skill, even at the stage of postgraduate training.¹⁶ It has also been shown that explicit requirements in practical skills set by an institution are frequently not matched by the delivery of teaching.¹⁷ Specific requirements need to be set regarding clinical skills procedures in a curriculum.

This study has limitations of small sample size and self-claims based data where there was no triangulation or verification of the self-claimed data. Further large-scale studies are required to reveal more information regarding these issues.

Conclusion

In curriculum development, universities need to identify core competencies and occupational standards that a medical professional must possess at the house officer level. The purpose of medical education is to provide the students with the core values and essential knowledge and skills that they will later apply to their practice, and the aim of a competence-based education is to make explicit links between education and practice such that education is tailored to the requirements of practice.

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