

Achieving clinical competence

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The main aim of medical training is to acquaint students with the necessary competencies, both in basic medical sciences and clinical skills. Clinical skills are usually taught by exposing students to patients through clinical clerkships. During these clerkships, students acquire diagnostic, treatment, and patient-physician communication skills. Despite the fact that experiences in the clinical rotations are less structured and variable, they are still believed to be of crucial importance to medical students. These experiences could provide means by which students can apply their knowledge and be introduced to their future career environment.

Clinical skills' teaching has been carried out both in ambulatory care and inpatients settings. Perceived advantages of hospital-based learning include management of acute medical conditions and gaining experience of procedures and investigations. On the other hand, community based learning was perceived particularly appropriate for learning of a patient-centered approach care and for improving communication skills. The combination of teaching in these 2 sites is likely to provide the most effective technique to medical students.¹ There are many factors that influence the quality of students' learning in these settings, like number of patients, varieties of pathologies (patient mix) seen by students, quality of supervision and feedback, students' relationship with faculty, and organization of teaching. Interestingly, the vital role of supervision was especially apparent when there was a limited patient mix. This emphasizes the fundamental role of supervision in compensating for the gaps in students' learning.² It has been demonstrated that measuring effectiveness of clinical rotation by mainly relying on number of encounters with patients is not accurate. However, it has been confirmed that quality of

supervision seems to be the most important determinant of students' learning.

Exposure to a large number of clinical problems is necessary for students to practice and strengthen their clinical skills. This is particularly important as the diagnostic process, to a great extent, depends on proper history, and physical examination skills more than on results of laboratory investigations. Clinical experience showed considerable variation between sites of student learning, but post rotation scores were similar. Performance of students on the Objective Structured Clinical Examination (OSCE) was positively associated with high volume experience in emergency admissions and feedback, and negatively associated with high-volume outpatient clinical experience. These data highlight again the importance of both the volume of clinical experiences and quality of feedback.

Simulation is another relatively new, but increasingly used teaching strategy, which is used to overcome practical difficulties in providing certain clinical cases and situations. Simulations include use of devices, trained persons, and virtual environments. The use of such methods was shown to be effective and could facilitate students' learning and compliment traditional medical education. Simulation is particularly effective if it is repetitive, integrated within the curriculum and followed by constructive feedback to students.³ Interestingly enough, another study showed that students' performance in a final examination was not related to students' clinical experiences but to their strategic and deep learning styles. This suggests that acquisition of knowledge from clinical experience and the ability to continue to gain experience throughout a professional career could be predicted by knowing students' learning style. The amount of clinical training and time spent on a task are other identified factors that

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contribute to the development of diagnostic accuracy of medical students.⁴

Students' learning could be facilitated or obstructed by many factors. Facilitating factors include: allowing students to take more responsibilities in patient care, independence, opportunities to practice different tasks, and receiving feedback. Other perceived promoting factors included perceptions of control of the situation and understanding of the 'whole picture'. Students' learning could be obstructed by factors including less reliance on students, lack of continuity of supervision, and lack of opportunity to practice.

Clinical supervision has a vital role in undergraduate and postgraduate education. Supervision is defined as: "The provision of guidance and feedback on matters of personal, professional, and educational development in the context of trainees' experience of providing safe and appropriate patient care."⁵ Supervision should be offered in the context of learning to be effective. Other characteristics of effective supervision include offering constructive, structured, frequent, and regular feedback sessions. In addition to clinical management, supervision should include teaching and research, personal and professional development, and reflection. It has been also shown that direct observation of students, and working together with supervisors positively affects patient outcome. The quality of the supervisory relationship is probably the single most important factor for the effectiveness of supervision, more important than the method of supervision used.

Learners indicated that respecting their autonomy and independence are other important characteristics of an effective clinical teacher. Feedback is an essential ingredient for effective learning. Students want feedback on their performance to gauge progress concerning knowledge, competence, and faculty expectations, and rate giving feedback as an essential quality of effective clinical teaching.⁵ The clinical learning climate is believed to influence learners' behavior and predict students' satisfaction and success. The term 'clinical learning climate' and 'learning environment' are used interchangeably to describe the perceived 'soul and spirit of the medical curriculum'. Early students' hospital experiences were perceived as "difficult" for many of them. This is due to the fact that they had insufficient guidance and support. Students felt also

that teaching in this environment was opportunistic and less structured. Moreover, they reported that their contribution to patients' care was not encouraged. Students' relationships with other professionals, such as nurses, were found to be difficult, which may have had a negative impact on their motivation and learning. These issues compromised students' commitment and motivation.

In conclusion, provision of a variety of adequate authentic clinical experiences is an essential requirement for clinical learning. These experiences should be patient-centered and introduced early in the curriculum. Exposure to both clinical and non-clinical experiences should be appropriately documented and monitored to be incorporated in students' learning and assessment, and to ensure the effectiveness of the learning process. Students' clinical learning and behaviors are influenced greatly by the learning environment. The combination of teaching in family medicine centers, and hospitals is likely to provide the most effective approach for optimal clinical learning and teaching.

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