

Strengths and weaknesses of medical training programs: the resident's view

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Introduction The need for a unified medical education process in the European Union (Bologna Process) provides an opportunity to develop a new model of physician and medical training.¹⁻³ New training tools have been developed (simulation systems, informatics, problem solving) and schools of medicine have incorporated them into their training programs to a different degree.⁴

It would be valuable for planning new education strategy to know how the residents experienced their incorporation to hospitals, what strengths and weaknesses they found in their knowledge and abilities when facing real patients and taking decisions about their care.

The aim of this paper was to assess what contents, abilities, and attitudes the residents felt to be insufficient in their training as physicians in the setting of selected Spanish schools of medicine. The teaching methodology and the assessment process have also been investigated.

Patients and methods A descriptive study was performed. All residents working in the hospitals of San Juan de Alicante, Elche, and Marina Baixa during the years 2008 and 2009 received a previously designed questionnaire to complete. It consisted of 81 items to be evaluated with the Likert-like scale (FIGURE 1). For the analysis, the items were classified into 4 main groups: a) 40 items to assess the informative contents or knowledge along the medical training period, b) 19 to evaluate the acquisition of clinical abilities/skills, c) 8 to adopt right attitudes, and d) assessment methodology. Each group was divided into subgroups. The informative items were designed to evaluate contents in: a1) basic science (anatomy, histology, physiology, biochemistry, biostatistics), a2) clinical science (gastroenterology, pneumology, cardiology, nephrology, rheumatology, endocrinology and nutrition, neurology, oncology, hematology, psychiatry, geriatrics, and allergy), a3) surgery (general surgery,

surgery of the gastrointestinal system, thoracic surgery, cardiovascular surgery, neurosurgery, endocrine surgery, oncologic surgery, orthopedic surgery, and urology), a4) medico-surgical sciences (otolaryngology, ophthalmology, dermatology), and a5) other new contents that residents should be acquainted with (emergency medicine/intensive care, palliative care, primary care, evidence-based medicine, medical professionalism, clinical epidemiology, health management, team work, and leadership).

Clinical practice abilities/skills were divided into: b1) traditional abilities (clinical interview, physical examination, case presentation, easy technical procedures, diagnostic judgment, establishing prognosis, and prescribing therapeutic measures) and b2) new abilities (informatics, team work, communication with relatives, decision making, global approach to the patient, teaching fellow workers, bibliographic search and investigation).

Evaluated attitudes included an open mind to critical reasoning, new knowledge and ethical principles of the profession, favoring self-formation, knowing your limitations and ability to ask for help, continuous medical education, interest in the quality of care, safe and cost-effective medical practice.

Teaching methodology was also evaluated in 2 different categories: d1) traditional (lectures and practical classes with patients) and d2) new methods (simulations, clinical-case discussion).

The assessment methods, examining knowledge (informative contents) and skill acquisition during the medical training period, were evaluated (whether they were adequate and whether residents considered them fair).

The questionnaire was anonymous. Only residents that had studied in a Spanish faculty were included. Data were analyzed with the SPSS 12.0 (SPSS, Inc. Chicago, Illinois, United States) statistical package.

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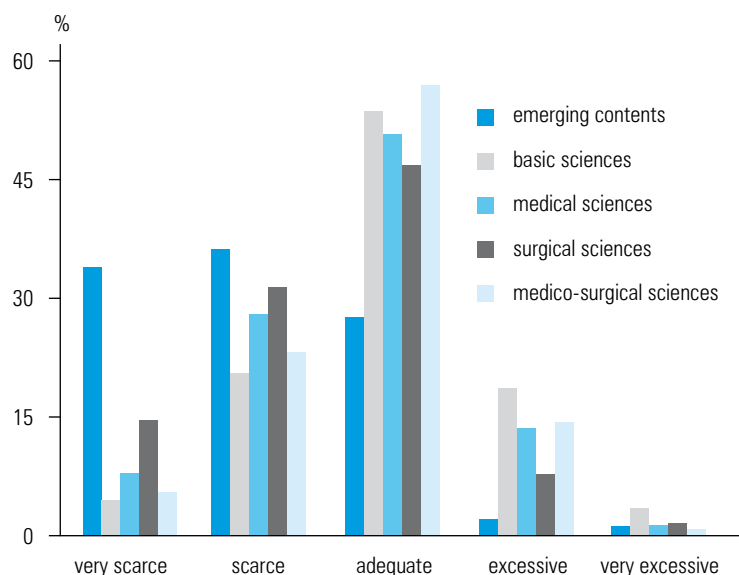


FIGURE 1 Evaluation of the informative content

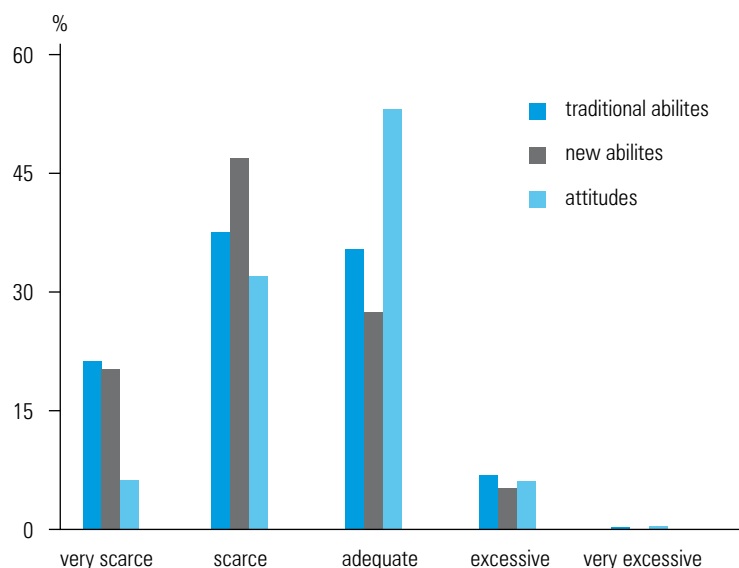


FIGURE 2 Evaluation of the training in abilities and attitudes

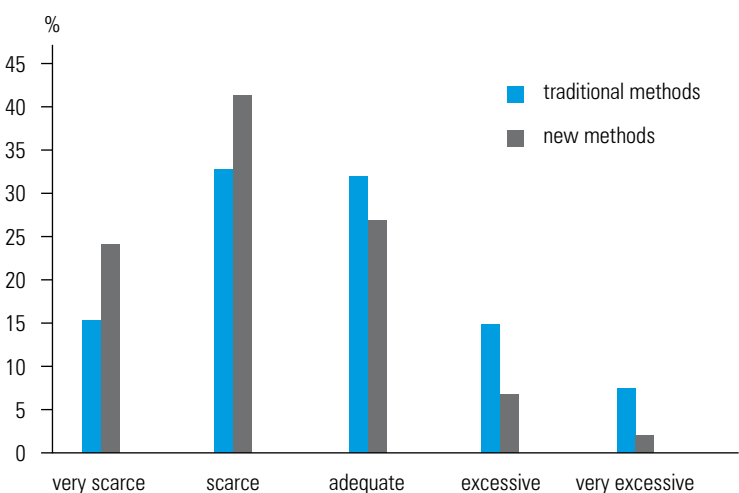


FIGURE 3 Evaluation of teaching methodology

Results A total of 58 questionnaires were considered valid for the analysis, which constituted 15% of the sample. The mean age of residents was 25 ± 3.5 years; 66% of the residents were women; 65% had studied at the Miguel Hernández University of Elche, 10% at the University of Murcia, 10% at the University of Valencia, and the rest at 8 other universities in Spain. The informative contents the residents had studied as medical doctors were evaluated as adequate by approximately 50% of the respondents (basic medical sciences – 53.42%, clinical medical sciences – 50%, surgical sciences – 47%, and medico-surgical sciences – 57%). The “new contents” were considered scarce or very scarce by 70% (FIGURE 1).

Regarding training in abilities, both traditional and new abilities were considered to be scarcely or very scarcely trained by 58% and 67% of the residents, respectively (FIGURE 2). The acquisition of right attitudes were considered to be trained adequately by 53% of the residents, although 32% considered this training scarce (FIGURE 1).

The traditional teaching methods were considered adequate by 32% of the residents, but scarce by 32%. The new teaching methods were considered scarce by 41% of the residents (FIGURE 3). According to most residents (63%), the exams they had passed evaluated the knowledge they should learn adequately and that the exams were fair (FIGURE 4). About 50.9% of the residents believed that the methodology used to evaluate the practical abilities/skills was adequate and 63% (FIGURE 4) considered it fair. The majority of residents considered both types of exams, i.e., those evaluating informative contents and those evaluating the acquisition of skills/practical exams, as adequate, although a number of residents considered the number of items as scarce or very scarce (FIGURE 4).

Discussion Many schools of medicine offer learning programs that are not clearly oriented at clinical competence that students should achieve.⁵ The Bologna process is an excellent opportunity to introduce changes in these programs and make them more adequate to meet the society’s needs.¹ That is why we considered the present study interesting. It could offer us, the teachers, an important view (feedback) on the validity of our teaching programs related not only to knowledge or informative contents but also to the acquisition of clinical abilities and attitudes and to the learning of methodology and the evaluation system used.⁵⁻⁷

Generally, most of the items evaluated were considered adequate by residents. Regarding informative contents (knowledge), only the emerging informative contents were considered as insufficient. This could be related to the novelty of the contents that have not been established clearly enough to be introduced into the training programs.

Training in abilities was considered insufficient. Not only for the traditional abilities (clinical

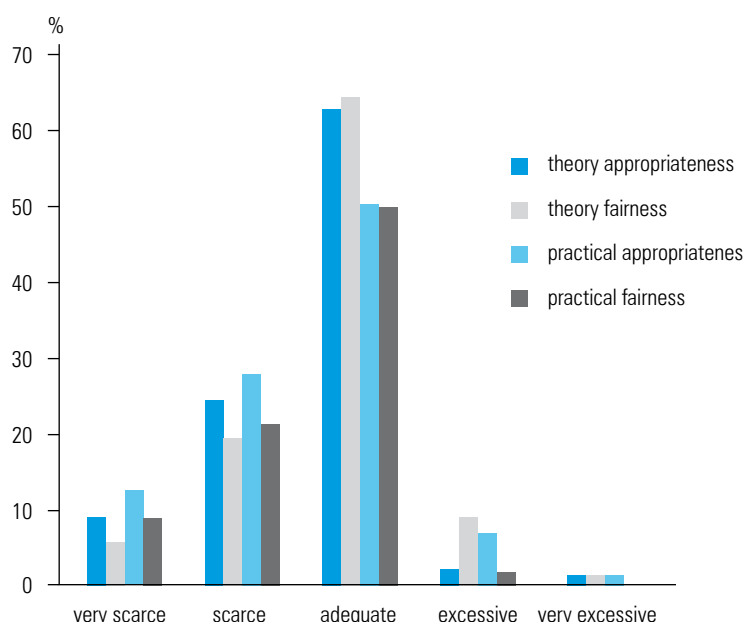


FIGURE 4 Evaluation of the appropriate assessment of knowledge and practical abilities as well as fairness of theoretical and practical exams

interview, physical examination, etc.) but also the new ones (informatics, communication with relatives, decision making, etc.). This is probably related to the fact that medical students are not well integrated in medical work, or the time devoted to this purpose is insufficient. Most residents are aware of this limitation.

Learning problem-solving skills was considered to be insufficient by most of the residents.⁸ This could be one of the issues to consider while modifying future learning programs: more emphasis should be placed on problem solving, acquisition of practical clinical skills, inclusion of the emerging contents, while the role of traditional lectures should be limited.

The study has several limitations: a small number of residents and medical schools were included, and the schools probably followed different teaching programs. Thus, the results cannot be extrapolated to other settings. In the present study, we support the validity of the assessment methodology used, provided that it is feasible. Such approach could offer us a valuable and relevant information about the outcome of the current medical undergraduate training programs.

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