



## REVIEW ARTICLE

# The assessment of surgical skills as a complement to the training method. Revision<sup>☆</sup>



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### Abstract

**Context and objective:** The acquisition and improvement of surgical skills constitute a fundamental element in the training of any practitioner. At present, however, the assessment of these skills is a scarcely developed area of research. The aim of this study was to analyze the peculiarities of the various assessment systems and establish the minimum criteria that a skills and knowledge assessment system should meet as a method for assessing surgical skills in urological surgery.

**Acquisition of evidence:** Scientific literature review aimed at the various currently available assessment systems for skills and competencies (technical and nontechnical), with a special focus on the systematic reviews and prospective studies.

**Summary of the evidence:** After conducting the review, we found that the various assessment systems for surgical competence have, in our opinion, a number of shortcomings. There is a certain degree of subjectivity in the assessment of surgeons by the evaluators. The assessment of nontechnical competencies is not formally recorded. There is no description of a follow-up assessment or any basic parameters associated with healthcare quality. There is no registration of associated competencies associated with the various surgical techniques. There is also no ranking of these competencies and the specific peculiarities for their application.

**Conclusions:** We believe that the development of a new assessment system for surgical competencies (technical and nontechnical) aimed at assessing urologists in the various surgical

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**PALABRAS CLAVE**

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techniques is necessary. To this end, our team has worked on developing the Evaluation System for Surgical Competencies on Laparoscopy, which is based on the definition, ranking and assessment of competencies demonstrated by surgeons.

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## La evaluación de competencias quirúrgicas como complemento al método formativo. Revisión

### Resumen

*Contexto y objetivo:* La adquisición y mejora de las habilidades quirúrgicas son un elemento fundamental en la formación de cualquier profesional. Si bien, la propia evaluación de estas constituye, por ahora, un campo con escaso desarrollado. El objetivo de este trabajo es analizar las particularidades de los diferentes sistemas de evaluación y establecer los criterios mínimos que debe reunir un sistema de evaluación de habilidades y conocimientos, como método de evaluación de competencias quirúrgicas en cirugía urológica.

*Adquisición de evidencias:* Revisión de la literatura científica orientada a los diferentes sistemas de evaluación de habilidades y competencias, técnicas y no técnicas, disponibles en la actualidad, con especial atención a las revisiones sistemáticas realizadas y a los estudios prospectivos.

*Síntesis de evidencias:* Tras la revisión efectuada, encontramos que los diferentes sistemas de evaluación de competencias quirúrgicas presentan, a nuestro juicio, una serie de carencias: existe cierto grado de subjetividad en la evaluación de un cirujano por parte del evaluador; no se recoge formalmente la evaluación de competencias no técnicas.; no se describe un seguimiento de la evaluación ni unos parámetros básicos asociados a calidad sanitaria y no existe un registro de competencias asociadas a las diferentes técnicas quirúrgicas, como tampoco se describe la graduación de las mismas y las particularidades específicas para su aplicación.

*Conclusiones:* Entendemos necesario el desarrollo de un nuevo sistema de evaluación de competencias quirúrgicas, técnicas y no técnicas, orientado a la evaluación de urólogos en diferentes técnicas quirúrgicas. Para ello, nuestro equipo ha trabajado en el desarrollo del sistema Evaluation System for Surgical Competencies on Laparoscopy, fundamentado en la definición, graduación y evaluación de aquellas competencias que demuestra un cirujano.

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## Context

Medicine, and particularly surgery, have provided in recent years new materials, instruments, equipment, and new treatments and medical-surgical considerations for different diseases, implying a mandatory adaptation to them.<sup>1,2</sup> Minimally invasive surgery, meanwhile, has had a steady growth, consolidating in most surgical specialties, including urology, but it requires the development of training programs to ensure adequate training.<sup>3</sup> However, at present, the traditional method of surgical training is still in force, where the role of the learner is relatively passive and is subject to the acquisition of skills through imitation of the tutor, whose evaluation may be conditioned to their personal relationship, beyond objective academic criteria.<sup>4,5</sup>

While the acquisition and improvement of surgical skills are a key element in the training of any professional, the assessment of these skills itself is, by now, a field with little development. Thus, the tools available today focus on the assessment of knowledge and the application thereof during surgery, and in the consideration of specific aspects of the surgical act. However, several authors consider that these assessment systems have a number of shortcomings such as

some subjectivity, lack of reliability and validity, besides not systematically considering non-technical skills.<sup>1,6-8</sup> Thus, the need for new models of education raises, based on structured surgical training programs, in which learning includes the continuous acquisition of knowledge, training of surgical techniques outside the operating room in safe environments through the simulation, and acquisition and assessment of skills and competencies with objective tools and based on evidence.<sup>9-11</sup> Specifically, urology also needs models of training and assessment of capacities, in order to respond to learning of basic skills and improvement of more advanced skills.<sup>1,12-14</sup> If, according to the dictionary of the Royal Spanish Language Academy, we understand the concept of competence as the skill and ability to do something, in the field of surgery it involves the skills, knowledge, and attitude to perform a surgical procedure, and it involves the surgeon's ability to perform a particular required task.<sup>15,16</sup>

## Objectives

The main objective of this paper is to analyze the characteristics of the most common systems of evaluation of surgical skills and the different lines of work in this regard that

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