



## ORIGINAL ARTICLE

# Simulators help improve student confidence to acquire skills in urology<sup>☆</sup>



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### KEYWORDS

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### Abstract

**Objective:** To know the level of confidence of fifth-year medical students in order to perform maneuvers in bladder catheterization and rectal examination before and after training with simulators. To be able to assess student satisfaction regarding the use of the simulation as a learning method.

**Materials and methods:** The study was conducted in the Simulation Center of the Faculty of Medicine. A total of 173 students who completed a practical workshop on the subject of Urology participated. The students were asked to answer anonymous questionnaires on their level of confidence in performing a bladder catheterization and rectal examination before and after the workshop as well as their satisfaction in using the simulation as a training tool. The workshops were organized using groups of 10 students. A teacher or a resident in that area of expertise supervised each student individually, resolving their doubts and teaching them the proper technique.

**Results:** All the evaluations made on the different abilities were significantly higher after training ( $p < .001$ ). Significant differences were found in the confidence level between men and women before the training regarding male urethral catheterization maneuvers and recognition of normal or pathological prostate. The confidence level was lower in women ( $p < .05$ ). These differences disappeared after training. The level of overall satisfaction with the workshop was high, going from  $4.47 \pm 0.9$  to a maximum score of 5.

**Conclusions:** Simulation is a training method that helps improve the confidence of the medical student in performing a bladder catheterization and digital rectal examination.

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**PALABRAS CLAVE**

Estudiantes de medicina;  
Sondaje uretral;  
Tacto rectal

## La simulación mejora la confianza de los estudiantes para adquirir competencias en urología

### Resumen

**Objetivos:** Conocer el grado de confianza de los alumnos de quinto de grado en Medicina para realizar las maniobras de sondaje vesical y tacto rectal, antes y después del entrenamiento con simuladores. En segundo lugar valorar la satisfacción de los estudiantes respecto a la utilización de la simulación como metodología de aprendizaje.

**Material y métodos:** El estudio se llevó a cabo en el Centro de Simulación de la Facultad de Medicina, y participaron los 173 estudiantes que realizaron el taller práctico de la asignatura de Urología. Mediante cuestionarios anónimos los estudiantes respondieron a preguntas sobre su grado de confianza en la realización del sondaje vesical y el tacto rectal, antes y después del taller, y sobre la satisfacción general respecto a la simulación como herramienta de entrenamiento. Los talleres se organizaron en grupos de 10 alumnos y estaban dirigidos por un profesor o residente de dicha especialidad que supervisaba de manera individual, resolvía dudas e instruía en la técnica correcta.

**Resultados:** Todas las valoraciones respecto a las distintas competencias fueron significativamente más altas tras el entrenamiento ( $p < 0,001$ ). Se encontraron diferencias significativas en la confianza antes del entrenamiento entre varones y mujeres en la maniobras de sondaje uretral masculino y reconocimiento de próstata normal o patológica, siendo menor la confianza en mujeres ( $p < 0,05$ ). Estas diferencias desaparecieron tras el entrenamiento. El grado de satisfacción general con el taller fue alto, de  $4,47 \pm 0,9$  sobre una puntuación máxima de 5.

**Conclusiones:** La simulación es un método de entrenamiento que mejora la confianza del estudiante de Medicina en la práctica del sondaje vesical y tacto rectal.

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## Background

We can define medical simulation as a learning methodology that provides students with competence training using mannequins or simulated clinical scenarios. The use of simulations for teaching in medical degree programs is highly valuable for improving student training and thereby increasing safety in health care.<sup>1</sup>

According to the Report by the Evaluation Commission of the Title of Degree in Medicine concerning urinary system disease, students should have, upon completion of their training, "practiced the following competencies under tutor supervision: rectal examination, prostate examination and male/female vesical catheterization".<sup>2</sup> These types of examinations are frequently performed in clinical practice; however, student training depends mainly on whether they perform the specific rotation in this department, on the number of patients who allow the examination, as well as the disease the patients present when they visit the specialist.

One of the alternatives for conducting this training is the use of urological simulators, models that enable students to learn the anatomy and practice the skill.<sup>3</sup>

The aims of our study were to determine the level of student confidence in performing rectal examinations and urethral catheterization, before and after training with the simulators, and to assess student satisfaction with the use of simulators in learning these skills.

## Materials and methods

### Participants

In the academic year 2012–2013, 173 students in the fifth year of their medical degree at the University of Navarra took the urology course. This was the first class of the Degree in Medicine, and it was in this course that this learning methodology was implemented.

Data were analyzed from 155 students who had not rotated through the Department of Urology, with a mean age of  $21.96 \pm 0.6$  years and a gender distribution of 61.3% women and 38.7% men.

### Workshop implementation

The theoretical subject matter was explained in class, and the practical skills training was performed at the simulation center.

The workshops were organized in groups of 10 students and were directed by a teacher or resident of this specialty. Attendance at the practical training was mandatory, and each workshop lasted 2 h.

The workshops were divided into 2 parts: a theoretical introduction lasting approximately 20 min covering the necessary material for performing vesical catheterization, the indications, contraindications and care required for patients who carry vesical catheters, as well as the proper technique for performing catheterization in men and women. Similarly,

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