

# PERIOPERATIVE NURSING ROLES AND EXPERIENCES IN ROBOTIC-ASSISTED SURGERY (RAS)



Author: Diana de Benito Linares Tutor: Mónica Arias Colinas



Universidad  
de Navarra

FACULTAD DE  
ENFERMERÍA

## 1. INTRODUCTION

- ❖ Robotic-assisted surgery (RAS) is defined as a new type of surgical procedure performed with the cooperation of a robot in the operating room (OR).<sup>1</sup>
- ❖ The DaVinci® robot is a main body composed of four arms or columns from which Endowrist® instruments are inserted. It reflects in real time the surgeon's wrist movements and reproduces them on a vision board. These have articulated systems at their distal ends that can be exchanged depending on the intervention.<sup>2</sup>
- ❖ The introduction of these technologies requires nurses to increase their responsibilities and skills, resulting in a more complex working condition.<sup>1</sup>
- ❖ Nurses are perceived as very poorly trained for the responsibility these new technologies require. It is important they catch enough experience and adapt to new skills needed to offer good patient care.<sup>3</sup>

## 2. OBJECTIVE

Explore the perioperative roles and experiences of nurses in robotic-assisted surgery.

## 3. METHODOLOGY

### KEYWORDS:

Perioperative AND nursing roles AND nursing experiences AND robotic surgery

PubMed → (n=158)  
CINAHL → (n=17)

Filters applied (English & Spanish, 10 year gap)

### Inclusion criteria:

- 10 years
- English & Spanish
- Nursing roles & experiences
- Robotic surgery

### Exclusion criteria:

- Healthcare professionals other than nurses.
- Studies involving RAS roles and not nursing.
- Studies involving specific interventions

Duplicates removed with  
Covidence (n=6)

Studies excluded by Title  
& Abstract (n=149)

Studies assessed for  
eligibility (n=20)

Studies excluded  
(n=8)

Final number of  
studies included (n=13)

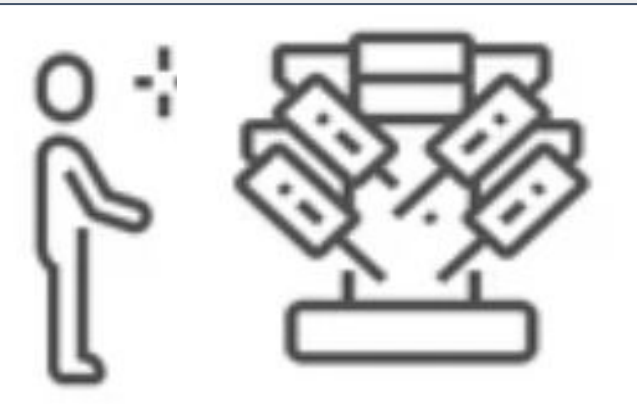
"Snowballing"  
technique (n=1)

## 5. CONCLUSION

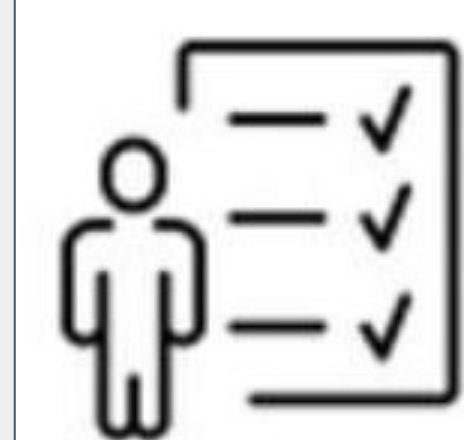
- ❖ Nurses play a crucial role in managing new technologies, handling instruments, and ensuring effective patient care.
- ❖ RAS requires the teamwork to implement specific communication feedback in order to reduce workflow interruptions and prevent adverse effects that could be avoidable.
- ❖ The integration of new technologies may introduce challenges within the surgical team, highlighting the need for continuous co-education and adaptability.
- ❖ Consistency and stability in the team is mentioned as important to improve communication and patient care.

## 4. RESULTS

### TECHNOLOGICAL & EQUIPMENT SKILL



- ❖ Nurses must cover everything related to equipment including the solution of any malfunction or technical problem minimum the day before the intervention.<sup>4</sup>
- ❖ Know the function of each new instrument and when they are required to be used as well as anticipate needs. They not always rely on the surgeon's indications.<sup>3,4</sup>
- ❖ Acquire sufficient knowledge and up-to-date training amongst RAS interventions to ensure effective patient care.<sup>1,2,3,5</sup>
- ❖ Management of technical problems and monitor continuously the system.<sup>1,2,3,4</sup>



### RESPONSIBILITIES IN PATIENT CARE



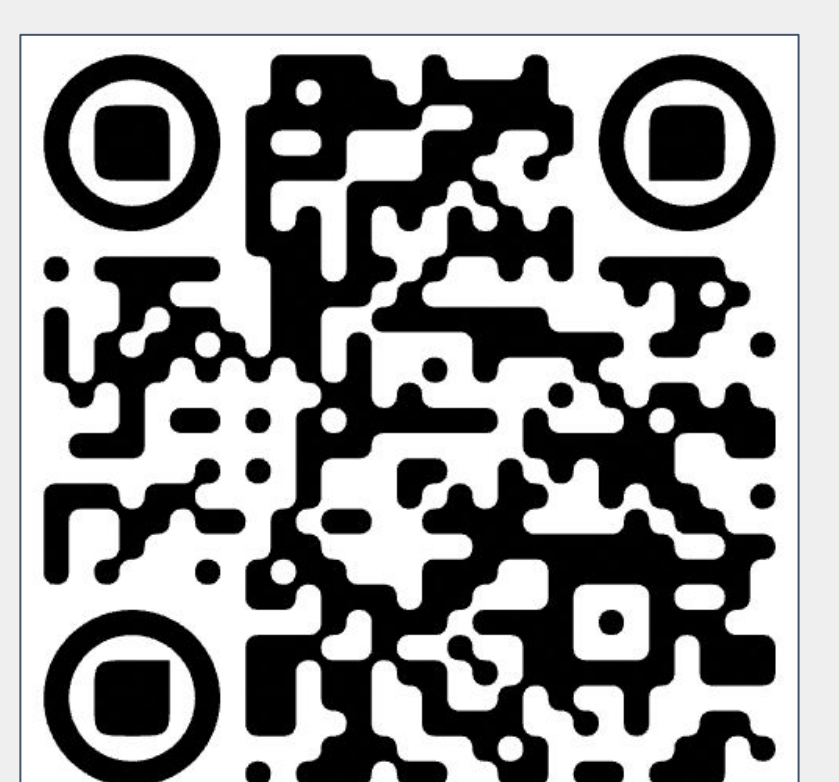
- ❖ Installation and monitorization of vitals signs; correct asepsis and positioning of the patient to prevent the risk of developing position-related complications.<sup>2,3,4,6,7</sup>
- ❖ Use of checklists before starting the intervention to reduce errors.<sup>3,7,8,9</sup>
- ❖ Surgical counting of gauzes, compresses and any instrument or equipment that was in contact with the patient.<sup>8,10</sup>



### CHANGES IN TEAMWORK DYNAMICS



- ❖ Feelings of uncertainty from many nurses due to the lack of clear roles and responsibilities in RAS.<sup>1,8,11</sup>
- ❖ Nurses in RAS reported having to perform tasks outside their authority risking patient safety.<sup>11</sup>
- ❖ Constant changes in communication patterns between the surgeon and nurses due to unavoidable interruptions such as their positioning with the console away from the patient.<sup>1,4,6,12</sup>
- ❖ Concerns and fears about the idea of working with inexperienced team members due to the complexity and time involved in adapting to these robots.<sup>5,6,12</sup>



BIBLIOGRAPHY