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Developing Fundamental Perioperative Nursing Educational Program of Robotic Assisted Surgeries

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Research Article

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ABSTRACT

Literature of nursing care during robotic surgeries related is limited. As the trending of robotic surgeries, we would like to create a mentoring educational program for nursing students during the nursing internship. Based on systemic data collection and built mentoring guidelines of perioperative robotic surgeries. We aimed to improve the knowledge and skills of perioperative nursing care and provide the high quality of perioperative nursing care to patients undergoing the robotic surgery. This program provides an integrated concept of robotic surgeries to perioperative nursing students, improves the effectiveness of clinical practice and better perioperative nursing experience expectantly.The surgeon's eyes, the three-dimensional camera, increase the visual depth and perception of the surgeon. The robot mimics movements of human's wrist, hands and fingers plus excludes the essential human hand tremors to obtain the better results.

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INTRODUCTION

surgeries. In early 20 century, the robotic system was introduced to overcome some limitation of endoscopic surgeries and facilitate a laparoscopic approach to various robotic surgeries. The robotic system, da Vinci, first approved by FDA (Food and Drug Administration) robotic surgical system, provides a 3-dimensional view of the operative field and applied specified instruments that mimic the movements and dexterity of the human hand. It reduces the operating time and the length of hospital stay.

The robotic surgical system consists three main parts: the surgeon console, the patient cart, the vision cart. The surgeon leaves the sterile field to perform surgery in front of surgeon console with three manipulators and 3-dimension view. Manipulators duplicate the fingers' movements of surgeon then transmit signals to robotic arms into the patient's body to conduct the surgery.

At the beginning of surgery, the surgeon creates trocars in proper anatomical location to obtain visualization. The circulating nurse guides docking the patient cart toward the precise position of a patient. The first assistant places instruments into operation field through trocars. The surgeon sits in front of the console during procedures performing. As the robotic system provides a three-dimensional view, ergonomic advantages increase the dexterity and ability to perform microsurgery. The benefits are shorter hospital stays, less post- operation pain and complications.

Literature of nursing care during robotic surgeries related is limited. As the trending of robotic surgeries, we would like to create a mentoring educational program for nursing students during the nursing internship. Based on systemic data collection and built mentoring guidelines of perioperative robotic surgeries. We aimed to improve the knowledge and skills of perioperative nursing care and provide the high quality of perioperative nursing care to patients undergoing the robotic surgery. This program provides an integrated concept of robotic surgeries to perioperative nursing students, improves the effectiveness of clinical practice and better perioperative nursing experience expectantly.The surgeon's eyes, the three-dimensional camera, increase the visual depth and perception of the surgeon. The robot mimics movements of human's wrist, hands and fingers plus excludes the essential human hand tremors to obtain the better results. Positioning is challenging when patients undergo robotic surgeries. Most of the robotic surgeries are under modified lithotomy position or modified Trendelenburg position. Besides, adjustment of positions produces shearing and friction damage on patients' skin. Circulating nurse prevent skin damage from positioning by checking skin integrity, padding and fixating correctly, reassessing skin after every movement of patients' position. Flexuous knee increases the risk of thrombosis of legs, for this reason, pressure legging is needed to increase venous return. Legs up position improve the possibility of peritoneum compressing lung base cause breathing restriction, fluid shifting worsens.

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