بالرسالة صفحات

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ASSESSMENT OF NURSES' PERFORMANCE IN MANAGING PATIENTS WITH PERIPHERAL INTRAVENOUS LINES: RELATED FACTORS

By

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Abstract

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Peripheral intravenous cannulation (PIC) are indicated for administration of drugs, nutrition, infusion solutions and blood products, but it is not without risk. The role of the nurse in providing intravenous therapy is determined by a number of factors including the complexity of the procedure, the degree of direction, the setting, and the skill competence of the license. Thus the current study aims to: (1) assess nurses' performance in managing patients with peripheral intravenous lines, and (2) identify factors that influence nurses' performance. A sample of convenience of sixty nurse working in the critical care unit, intensive care unit, and emergency department, at Al-Kasr Al-Aini (El- Manial University Hospital) were chosen as a study sample. Two tools were developed to collect data pertinent to the study variables. The first tool was a questionnaire sheet that consist of four main sections (a) sociodemographic variables of the study subjects,(b) nurses' knowledge of the management of patient with peripheral intravenous lines,(c)factors that govern nurses' way of acting, and(d) nurses' personal comments in relation to intravenous therapy.The second tool was a performance checklist to assess nurses' performance in cannula insertion, it includes three main areas; assessment and planning , intervention and monitoring, and documentation. Findings revealed that the study subjects were lacking the management knowledge as well as demonstrating unsatisfactory performance.There was a statistical significant correlation between knowledge and performance, and between knowledge and age; professional qualifications,and years of working experience among the study participants.The implications of these findings were discussed from the prespectives of developing more effective strategies for teaching nurses how to assess, plan,care for and document PIC ,taking into consideration aseptic measures, common insertion sites, signs of local inflammation and its management.

American Psychology association (APA) style of writing manuscripts was adopted throughout this master thesis.

Signed: Amal F. Jaraa

Chairperson of thesis

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IV	Intravenous
PIC	Peripheral Intravenous Catheter
VAD	Vascular Access Device.
PIC	Peripheral Intravenous Cannulation
PIV	Peripheral Intravenous
CRNI	Certified Registered Nurse Infusion
INS	Intravenous Nursing Society
AVF	Arteriovenous Fistula
TSM	Transparent Semi-permeable Membrane
B.Sc.N	Bachelor degree in nursing

CHAPTER I

Introduction

Establishment of intravascular access for the administration of therapeutics and diagnostic purposes is one of the common technologies in today's health care settings. Technology has made available many invasive, indwelling, and implantable devices that now play a vital role in patient care and treatment (Roach, Larson, Cohran & Bartlett, 2001).

The use of these technologies is associated with increased risk for complications such as bloodstream infection, thrombophlebitis, hematoma, phlebitis, infiltration and extravasation, local infection or cellulitis, and venous spasm. These complications are of particular concern to the nursing profession. Effective nursing measures for the prevention of such complications are considered as clinical research priority. (Vengelen & Bethesda, 1999)

Peripheral intravenous therapy is indicated for life –saving measures and for correcting metabolic problems through the administration of drugs, nutrition, solutions, and blood products. Vascular access is an essential step in the management of nearly every hospitalized patient. It is estimated that approximately 90% of hospitalized adult patients require intravenous therapy and are using vascular access devices (Hickey, Cason & Charles 2000). Each year, intravenous therapy contributes to saving the lives of many millions of people. Even in emergencies, intravenous (IV) catheterization has become a routine practice. However, any procedure which accesses the cardiovascular system must be treated with considerable care. (Maki & Band, 2001).

Elkin, Perry & Potter (1999) emphasized that the delivery of infusion therapy is an essential element that requires a nurse's professional accountability and competency. Knowledge of how to plan, insert, care for, and handle peripheral intravenous infusion lines is a part of the basic nursing education. When delivering infusion therapy nurses must systematically identify patients' needs and risk factors. Successful delivery depends on adequate patient preparation, choosing the appropriate vascular access site and devise, using proper insertion technique and closely monitoring and documenting the infusion until the completion of therapy. This should be in a manner that preserves and protects patient autonomy, dignity, rights and diversity. Many studies have shown a disparity between practice and knowledge when a peripheral intravenous infusion is given (Lundgren & Christina, 2000)

In Egypt there is no standard guide for IV nursing practice; on the contrary according to the professional license, nurses are not allowed to establish IV access, but only to maintain &monitor (Appendix C). Therefore, nurse practitioners should follow institutional policy and procedure when managing a patient with I.V. therapy. A national standard guide for I.V. nursing practice is essential in safeguarding the patient, the nurse, and the institution as well. It outlines nurses' scope of responsibility in the practice and education in the different speciality areas. Future goals include certification, continuing education, and implementation of coast-justified IV therapy.

Significance of the Study

The practice of infusion therapy encompasses various levels of knowledge and technical skills. The continuum of expertise extends from the nurse generalist who is practicing infusion therapy to the infusion nurse

specialist who is qualified to practice in an expanded role. A nurse's level of functioning within the specialty is based on education, experience, and technical-clinical expertise. The practice of infusion therapy requires the nurse to be accountable for all individual actions. To protect both the nurse and the patient, infusion therapy should be performed according to established standards.

Although the nurse doesn't necessarily insert all types of intravascular lines, she is responsible for maintaining these lines and preventing complications throughout the patient's therapy. She is responsible too for monitoring the solutions, maintaining flow rates and ensuring the patient's safety and comfort during IV therapy. These principles motivated the researcher to undertake this study to determine how IV is managed by nurses in clinical settings.

Such study which focuses on nurses' performance in managing patient with peripheral intravenous lines might have an important implications on patient care, as well as nursing practice, education and research. The results of this study will hopefully provide evidenced data that can help in establishing standards and benchmarks for IV practice, consequently this will help to ensure safe, efficient practice and quality patient care.

Statement of the Purpose

The purpose of this study was of two folds: (a) to assess nurses' performance in managing patients with peripheral intravenous lines, and (b) to identify factors that influence nurses' performance.

CHAPTER II

Review of Literature

Intravenous therapy will contribute to save the lives of many millions of people. Even in emergencies, intravenous catheterization IVC has become a routine practice, however, any procedure, which accesses the cardiovascular system, must be treated with considerable care. Delivery of infusion therapy is an essential element that requires a nurse's professional accountability and competency.

The aim of the present study is to assess nurses' performance in managing patients with peripheral intravenous lines, and to identify factors that influence nurses' performance. To fulfill this aim, the present review is devided into five subsections. First section will present a brief history of I.V therapy and. The second section focuses on nurse's role in IV therapy.Anatomy and physiology of the skin and vein are addressed in the third section . The fourth section is concerned with;vein selection for IV placement,choosing a venipuncture site,description of IV cannulas, venipuncture technique and possible complications.the fifth and last section presents an idea about infusion nursing standards and its goal.

A Brief History of I.V. Therapy

In Europe in the mid-1600s, medical researchers used a quilled bladder to inject opium into dogs. In 1667 lamb's blood was infused into a 15-year-old Parisian boy. The boy did not survive the infusion. In 1834, after a time lapse of almost two hundred years, the medical community decided that only human blood was safe for transfusion and that more studies needed to be done to determine what fluids could be safely infused

into humans. Another century passed before doctors and researchers, in 1928, started using I.V. fluids for infusion, especially normal saline (N.S.), an isotonic fluid (an isotonic solution is one that has the same tonicity as human blood). D5W (also an isotonic fluid, 5% Dextrose in water = 50 gm Dextrose in 1000 cc water) was used for added calories when needed (Trimble, 2003).

In 1930, intravenous infusions were done in the critically ill only, and only by doctors, with nurses assisting them. It was a major procedure done with sterile gowns, masks, surgical caps, etc. They also used and re-used sharpened and sterilized steel needles. Another decade passed before, in 1940, an R.N. was used as an I.V. specialist at Massachusetts General Hospital in Boston. In 1965 TPN (total parenteral nutrition) became standard and by 1970 plastic I.V. bags had replaced the use of glass bottles (Baldawin, 2001)

Today, 85%-95% of all hospitalized patients receive I.V.s in one form or another. The vascular access device (V.A.D.) usage is >180 million per year in the United States of America. The U.S. House of Representatives honors I.V .nurses on January 25th of each year by naming that day as I.V. Nurses Day (Pierce, 1999)

Legal Implications

Nurses and other medical personnel need to be aware of the legal issues surrounding I.V. therapy. It has been established that in questions of negligence, the R.N. is not protected just because he/she carried out a doctor's order. As far as I.V. placement is concerned, if nurses, in their