

Peripheral venous catheterization: the quality of nursing care in peripheral venous catheter insertion*Cateterismo venoso periférico: la calidad del cuidado de enfermería en la inserción de catéter venoso periférico**Cateterismo venoso periférico: a qualidade dos cuidados de enfermagem na inserção do cateter venoso periférico***Abstract**

The aim was to assess the quality of nursing care in the face of peripheral venous catheterization, discuss the quality of this service based on recommended standards and manuals, and the development of a self-explanatory folder about the technique based on ANVISA standards and manuals. This was a literature review study, covering the period from 2015 to 2020. The final total was 7 articles in Portuguese, which were used in the literature review. The discussion of the data found in the articles involved: quality indicators in the insertion of peripheral intravenous devices, nursing care in the insertion of peripheral intravenous devices in Neonatology (PICC and AVP), nursing care in the insertion of peripheral intravenous devices (Elderly and adults). Peripheral venous catheterization is a routine practice in hospitals, so it should be widely addressed in articles and studies, but the opposite is observed, professionals using the practice inappropriately causing great risks to the patient, so there is a need for constant training and strategies that reduce possible adverse events.

Descriptors: Nursing Care; Catheterization, Peripheral; Quality of Health Care; Nursing; Surgicenters.

Resumén

El objetivo fue evaluar la calidad de la atención de enfermería ante el cateterismo venoso periférico, discutir la calidad de este servicio en base a estándares y manuales recomendados, y la elaboración de una carpeta autoexplicativa sobre la técnica basada en estándares y manuales de ANVISA. Este fue un estudio de revisión de la literatura, que cubrió el período de tiempo de 2015 a 2020. El total final fue de 7 artículos en portugués, que se utilizaron en la revisión de la literatura. La discusión de los datos encontrados en los artículos involucró: indicadores de calidad en la inserción de dispositivos intravenosos periféricos, cuidados de enfermería en la inserción de dispositivos intravenosos periféricos en Neonatología (PICC y AVP), cuidados de enfermería en la inserción de dispositivos intravenosos periféricos (Ancianos y adultos). El cateterismo venoso periférico es una práctica de rutina en los hospitales, por lo que debe ser ampliamente abordado en artículos y estudios, pero se observa lo contrario, los profesionales que utilizan la práctica de manera inapropiada ocasionan grandes riesgos al paciente, por lo que existe la necesidad de una formación constante y estrategias que Reducir los posibles eventos adversos.

Descriptoros: Atención de Enfermería; Cateterismo Periférico; Calidad de la Atención de Salud; Enfermería; Centros Quirúrgicos.

Resumo

Objetivou-se avaliar a qualidade da assistência de enfermagem frente a inserção do cateterismo venoso periférico, discutir a qualidade deste atendimento com base em normas e manuais preconizados e a elaboração de um *folder* autoexplicativo acerca da técnica baseado em normas e manuais da ANVISA. Tratou-se de um estudo de revisão bibliográfica de literatura, abrangendo o lapso temporal de 2015 a 2020. Chegou-se ao total final de 7 artigos em português, que foram utilizados na revisão de literatura. A discussão dos dados encontrados nos artigos envolveu: indicadores de qualidade na inserção de dispositivos intravenosos periféricos, os cuidados de enfermagem na inserção de dispositivos intravenosos periféricos em Neonatologia (PICC e AVP), os cuidados de enfermagem na inserção de dispositivos intravenosos periféricos (Idosos e adultos). O cateterismo venoso periférico é uma prática rotineira nos hospitais, por isso deveria ser amplamente abordado em artigos e estudos, porém observa-se o inverso, profissionais utilizando a prática de forma inadequada causando grandes riscos ao paciente, por isso há uma necessidade de treinamentos constantes e estratégias que diminuam os possíveis eventos adversos.

Descritores: Cuidados de Enfermagem; Cateterismo Periférico; Qualidade da Assistência à Saúde; Enfermagem; Centros Cirúrgicos.

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Introduction

Peripheral venous catheter (PVC) is a medicinal resource widely used in the hospital environment for the practice of intravenous therapy. More than 70% of patients admitted to hospital institutions need the Peripheral Venous Catheter, which makes it one of the resources most frequently performed in these institutions¹.

Although the insertion of the CVP is often performed, technical errors in the procedure are frequently performed and put into practice without discussing the risks for patients².

In most cases, the use of CVP contributes to the patient's improvement, but, if not inserted correctly, it can lead to complications, the most frequent being phlebitis, infiltration, hematoma, thrombosis, and thrombophlebitis³.

One of the ways to avoid these events lies in choosing the appropriate catheters, choosing the appropriate site, using the sterile insertion technique, and infusing fluids and drugs in adequate amounts and concentrations^{4,5}.

The National Health Surveillance Agency (ANVISA) manual on infection prevention measures related to healthcare (ANVISA) describes ways to avoid contamination when inserting the peripheral catheter into the patient: 1- Hand washing; 2- Choice of the appropriate catheter 3- Maximum barrier precaution; 4- Preparation of the insertion site with chlorhexidine gluconate; 5- Choice of insertion site; 6- Daily review of the need for catheter permanence⁶.

Peripheral venipuncture is considered one of the greatest advances in the health area, being a technique constantly performed by the health team, for the infusion of liquids, medicines, blood, its components, and derivatives, directly into the venous network, through a peripheral venous catheter, providing instantaneous effect⁷.

For the procedures to be well done, the professional must have very specific knowledge and skills on the subject, factors considered to be basic requirements for carrying out procedures efficiently, at different levels of complexity⁸.

According to a current systematic review, around 65 to 70% of cases could be prevented by adopting measures such as the good insertion practices proposed by the Institute of Healthcare Improvement (IHI) and the improvement of device maintenance^{9,10}.

Therefore, it was important to advance this study, which proposed to analyze the care of insertion of peripheral venous catheters through standards and manuals and aims to gather data to clarify the following questions that guide the same: how care is provided of nursing performed in front of the insertion of the peripheral venous catheter? What is the quality of this service based on recommended standards? How is antisepsis performed when inserting a venous catheter?

Therefore, the object of this research is: The quality of nursing care in the insertion of peripheral venous catheters. Objective: Conduct a search for articles in the VHL that address peripheral venous catheter insertion based on ANVISA standards, discuss the quality of this service based on recommended standards and the development of a self-explanatory folder about the technique based on standards and manuals from ANVISA. Therefore, the development of this study became relevant, as the technical-scientific knowledge of nurses and the nursing staff on the technique of insertion of the venous catheter ensure the effectiveness of the procedure and the quality of care provided. Thus, the importance of this research for the care that precedes and during the insertion of the long or short-term peripheral venous catheter of the nursing team was justified, as it aims to contribute to the recognition of weaknesses in the care of the insertion of the venous catheter peripheral and add scientific knowledge for professional nurses and the nursing staff so that they can put into practice and provide quality care to clients.

Methodology

This was a literature review study that seeks the "theoretical context of the problem and its relationship with what has been investigated about it"¹¹.

For data collection, the VHL (Virtual Health Library) was used, which gathers in its system thousands of journals and academic articles and a wide variety of academic texts. For the search of articles, the descriptors "Peripheral Catheterism", "Nursing Care" and "Quality of health care" were selected, these were used in combination and with the use of the Boolean operator "AND" to increase the number of articles.

As inclusion and exclusion criteria, the following were established: articles must be in Portuguese, English, or Spanish; available free of charge and integrally on the internet; published in the time span from 2015 to 2020; only scientific articles were accepted, and other types of academic publications were excluded.

29,488 articles were initially raised by combining the three selected descriptors, after using the exclusion criteria this number was reduced to 5,659 and by reading the titles and abstracts, the final total of 7 articles was reached (Chart 2), which were used in the literature review, and this process is explained in Chart 1.

Afterwards, the discussion and analysis of the 7 articles selected according to the theme of this study was carried out, dividing them into discussion categories and subcategories. The articles used to contemplate the proposed categories are following a numerical sequence according to the reference numbering of this research. The articles listed through the survey in the databases are represented in the synoptic table.



Descriptor	Crossing	Total Publications	Full Texts	Publications between 2015-2020	Portuguese language	English language	Spanish language	Articles After Reading the Abstracts	Final Articles
Peripheral Catheterization	Peripheral catheterization AND nursing care	914	298	183	39	19	24	5	5
Nursing care	Nursing care AND quality of health care	28.476	10.821	5446	859	4280	363	0	0
Quality of health care	Peripheral catheterization AND quality of health care	98	45	30	10	16	5	2	2
Total Publications									7

The articles collected for data analysis were organized according to the following items: Titles, authors, year of publication between 2015 and 2020, objectives,

descriptors, languages, and a brief approach to the main theme of this study. They are displayed in Chart 2 as shown below.

Chart 2. Classification of articles. Cabo Frio, RJ, Brasil, 2020

Base	Titles	Authors	Year	Objectives	Descriptors	Languages	Approach
BVS	Técnicos de enfermagem e cateterismo venoso em pediatria	Costa AB, Medeiros LNB, Neves AD, et al	2020	Identify the practice and level of knowledge of nursing technicians about peripheral venous catheterization in pediatrics.	Pediatric Nursing; Knowledge; Nursing care; Peripheral Catheterization; Related Infections as a Catheter; Nosocomial Infection.	Portuguese	The study in question in Pediatrics sectors is relevant, as this procedure is often performed without following practical guidelines and norms national and international, which may pose risks to the child's health and for being one of the most frequently performed procedures during pediatric hospitalizations.
BVS	Práticas de Inserção, Manutenção e Remoção do Cateter Central de Inserção Periférica em Neonatos	Rangel RJM, Castro DS, Amorim MHC, et al.	2019	Evaluate nursing practices in the insertion, maintenance, and removal of the Peripherally Inserted Central Catheter in neonates.	Central Venous Catheterization, Peripheral Catheterization, Neonatal Intensive Care Units, Newborn, Nursing.	Portuguese	We identified in this study in question that insertion of the PICC in neonates is extremely important an adequate practice to avoid the risk of infections and major problems with Patient.
BVS	Indicadores de qualidade da assistência de enfermagem na terapia intravenosa periférica	Souza VS de, Amorim DO, Silva NB da et al.	2017	Check the quality indicators of nursing care in peripheral intravenous therapy.	Nursing care; Peripheral Catheterization; Health Care Quality Indicators; security of Patient.	Portuguese	Study conducted with data collection on the quality of venous catheter insertion based on ANVISA quality indicators.

BVS	Cuidados da equipe de enfermagem na punção intravenosa periférica segura em idosos hospitalizados	Santana RCB, Pedreira LC, Guimaraes FEO, et al	2019	Describe the care of the Nursing team in safe peripheral intravenous puncture in hospitalized elderly people, improve academic knowledge, obtaining subsidies to practice.	Nursing care; Patient safety; Old man; Peripheral Catheterization.	Portuguese	In this article, we see that the elderly are patients who need greater care with the venous catheter insertion procedure, as the skin spectrum, hydration, and the venous network itself influence.
BVS	Conhecimento de enfermeiros acerca do cateter central de inserção periférica: realidade local e desafios globais	Neto JA, Silva ACS, Vid, al AR, et al	2018	To analyze the knowledge of nurses regarding the use of peripherally inserted central catheters (PICC) as an intravenous device in care practice, in three public hospitals in the State of Rio de Janeiro.	Peripheral venous catheterization; training; nursing; intensive therapy.	Portuguese	It is known that a qualification course is required to perform the PICC technique, this study aims to show not only the professional's knowledge of the technique, but whether he is also qualified to practice it.
BVS	Cateterização venosa periférica por profissionais de enfermagem: estudo observacional	Olímpio MAC, Sousa VEC de, Campos ABF et al.	2017	Characterize the performance of peripheral venous catheterization by nursing professionals and assess its adequacy based on a protocol.	Nursing team; Neonatal Nursing; Peripheral Catheterization.	Portuguese	Observational method used regarding the practice of peripheral venous catheter insertion and a tertiary-level hospital based on standards and manual care.
BVS	Cateter central de inserção periférica: utilização no vale da paraíba paulista.	Jakitsch CBV, Carvalho DPL, Posso MBS et al.	2016	Check the use of the PICC catheter in the Health Care Establishments of Vale do Paraíba Paulista, in what way, since when they do it and the professionals involved in the process.	Indwelling catheters; Peripheral catheterization; Nursing.	Portuguese	An observational study was carried out with a questionnaire designed and based on the COFEN resolution - 258/2001, to analyze the professional's knowledge about the insertion, maintenance, and removal of the catheter.

Results and Discussion

In the initial analysis of the articles, it was determined that, regarding the language of the articles, 7 (100%) were in Portuguese, 0 (0%) in English and 0 (0%) in Spanish. There was a larger filter for national articles as the ANVISA manual will be used as a basis, which regulates the practice of insertion of venous catheters throughout the country.

By reading the articles, it was possible to group the articles by similarity of content, and from this to elaborate the following categories: Quality indicators in the insertion of peripheral intravenous devices, Nursing care in the insertion of peripheral intravenous devices in Neonatology,

Care of nursing in the insertion of peripheral intravenous devices in the elderly and adults.

Quality indicators in the insertion of peripheral intravenous devices

Peripheral venous catheter (PVC) is a medicinal resource widely used in the hospital environment for the practice of intravenous therapy. More than 70% of patients admitted to hospital institutions need the Peripheral Venous Catheter, which makes it one of the resources most frequently performed in these institutions¹.

In Brazil, we have the booklet of measures to prevent infection related to health care, an ANVISA manual that guides nursing professionals on most practices



commonly performed in hospitals and how they should be performed so that there is no risk or a low risk to the patient and their physical integrity.

In chapter 4.1 of the manual, it is seen that there are rules that guide the professional for the good practice of peripheral venous catheter insertion, such as: proper hand hygiene with liquid soap when hands are visibly dirty with blood or other body fluids, an alcoholic preparation for the hands between 60% and 80% when they are not visibly soiled and the use of procedure gloves for the puncture, which in turn do not replace hand washing. The choice of the appropriate catheter and the insertion site of the device chosen based on the intended purpose of the therapy, the viscosity of the drug or fluid that will be infused, the components and access conditions of the patient in question^{12,13}. Smaller caliber catheters cause less mechanical phlebitis (irritation of the vein wall by the cannula) and less obstruction of blood flow within the vessel. Good blood flow, in turn, aids in the delivery of administered medications and reduces the risk of chemical phlebitis (irritation of the vein wall by chemicals). Skin preparation should be performed with 0.9% chlorhexidine gluconate, povidone iodine or 70% alcohol^{14,15}. Chlorhexidine application time is 30 seconds while PVPI is 1.5 to 2.0 minutes. It is indicated that the application of chlorhexidine should be done in a back-and-forth movement, while that of PVPI should be carried out with circular movements and from the inside to the outside to avoid contamination of the area to be punctured. In case of visible residues at the puncture site, remove with soap and water before applying the chosen antiseptic¹⁴, the peripheral venous catheter insertion site should not be touched under any circumstances after antiseptics, several attempts to puncture the site can cause discomfort and pain to the patient, delay therapy and increase the risk of infection for the patient. Stabilization of the catheter is performed to prevent its displacement and loss of venous access. The stabilization of catheters should not interfere with the assessment and monitoring of the insertion site or hinder/prevent the infusion of drugs or fluids in general¹⁶. Catheter stabilization should be performed using aseptic technique. Adhesive tapes and sutures should not be used to stabilize peripheral catheters^{16,17}.

It is important to remember that non-sterile adhesive tapes such as common tape and non-sterile microporous tapes such as micropore cannot be used for stabilization or coverage of peripheral venous catheters. Non-sterile adhesive tape rolls can be easily contaminated with pathogenic microorganisms.

Nursing care in the insertion of peripheral intravenous devices in Neonatology

PICC – According to the ANVISA manual in chapter 4.3, which concerns the recommendations for peripherally inserted central catheters (PICC), it emphasizes that for pediatric patients and neonates, the additional insertion sites can be considered as follows: axillary veins, temporal vein and posterior auricular (head), saphenous and popliteal vein in the lower limbs¹⁸.

The PICC requires nursing professionals to take a qualification course so that they have theoretical-scientific knowledge about the practice, but in the article "nurses' knowledge about peripherally inserted central catheters" it is concluded that: most professionals do not are qualified to practice the insertion of the PICC, the results indicate the need for visibility of knowledge of the catheter by professionals, unaware of the advantages and importance of this device for the patient's recovery¹⁹.

Considering this, some articles on the practices of insertion of the PICC in neonatal patients were analyzed and the following result was found: Regarding the nursing practices for insertion of the PICC, it is indicated for neonatal patients using intravenous hydration, antibiotics, nutrition parenteral, glucose infusion above 12.5% and vasoactive amine infusion, which justifies the insertion of this device by the patients analyzed in this study, who need long-term intravenous therapy.

The type of catheter most used is in accordance with the literature, being the most used for the characteristics of weight and age of the NB in relation to the caliber and the lowest incidence of thrombophlebitis in relation to the material. Despite the success of the insertion practice being up to the 4th puncture attempt in most cases, it is worth showing that many NB suffered multiple punctures by professionals, and the maximum number of two puncture attempts by the professional is recommended by the INS. Multiple punctures considerably increase the chances of infection in the patient and greater exposure to pain that can cause long-term detrimental effects on neurological and behavioral development^{20,21}.

The most frequently punctured accesses were the cephalic and basilica, which are the most recommended in the ANVISA manual due to their larger caliber, smaller number of valves and easier handling in the insertion procedure and dressing change. The use of analgesics was found in most NBs during insertion nursing practices, which is justified by the priority of adopting measures, pharmacological or not, that reduce the pain caused by the invasive and painful procedure of insertion of the PICC. As for the position of the catheter bevel, its proper location is essential to prevent complications: it should be located in the superior vena cava or inferior vena cava, close to the junction with the right atrium, 0.5 to 1 cm outside the cardiac chamber to RN^{22,23}. The data obtained in this research show that, regarding the initial position of the majority, despite being central, they were not in the ideal position, requiring intervention.

AVP (Peripheral Venous Access) – For the construction of this subdivision, a specific article was selected: "Nursing technicians and peripheral venous catheterization in pediatrics"¹³. This article also uses the ANVISA manual for the construction of the study as a basis, and addresses topics that advocate good practices ranging from preparation to maintenance of the intravenous device in pediatrics.

Hand hygiene: In this article, 100% of professionals demonstrated knowledge of the technique, but only 79.3%



of professionals performed the procedure before venipuncture.

It was found that of the 111 nursing technicians who participated in the survey, 92.79% said that it is important to sanitize hands before putting on the procedure gloves, however, only 48.6% performed this practice.

At the last moment, 100% of the professionals stated that the procedure gloves are of paramount importance in carrying out the practice, but only 51.4% wore the gloves.

Selection of adequate catheter and insertion site: It is noted, for the place of choice to perform venipuncture, when the venous network is good, that 92.8% responded UL; in terms of knowledge, when asked about the correct sequence of venipuncture sites in Pediatrics and which one would avoid the puncture, 85.6% of the participants answered that they selected the hand veins and 1.8% reported avoiding the arm veins.

Skin preparation: Although 98.2% of the sample stated that it is not appropriate to change the catheter insertion site after application of the antiseptic, 18.9% reported that they still use this practice. It is noted that, after applying alcohol, wait some time before performing the practice of venipuncture, 69 (62.2%) answered yes; in terms of knowledge, 77.6% said it was important. It is indicated, in relation to the reuse of the same jelco in a new insertion site, that, of the 100% who said it is not correct to reuse, only 0.9% perform this practice almost always and 3.6% sometimes.

Nursing care in the insertion of peripheral intravenous devices

Elderly – This topic analyzed an article from the VHL database regarding nursing care during peripheral venous catheterization in hospitalized elderly¹⁶. The age considered elderly by the World Health Organization (WHO) is established according to the socioeconomic level of each country. In developing countries, an elderly person is 60 years of age or older. In countries that are already developed, the age extends to 65 years²⁴. According to Tobin DJ, the elderly person has characteristics related to the aging process - such as loss of support for the epidermis, decreased collagen and elastin, loss of elasticity of the vascular network, dryness in general, loss of strength and muscle tone, with limited movements, among others - and the aging process, when associated with chronic diseases, most often present²⁵. These changes need to be considered by nursing professionals in the practice of venipuncture for quality and damage-free care. The study consisted of nine female nursing professionals, two nurses and seven nursing technicians, when data saturation was reached. The age ranged between 25 and 49 years and the time working at the unit between six months and 16 years. All had taken a course on care for the elderly in their training and six already had previous professional experience in caring for the elderly. Considering this, the study was carried out in 3 categories: Consideration of the aging process, clinical condition and preparation of the elderly person for AVP, Selection of the

location for peripheral venous access, Choice of the intravascular device.

In the first category, which concerns the considerations about the aging process, therefore, the peculiarities of this population must have a different look, as factors such as comorbidities, capillary fragility, loss of fluid in the body composition, malnutrition, decrease in the subcutaneous tissue or conditions of confusion can make it difficult to practice and obtain peripheral venous access. In addition, changes in the immune system, the skin, and a decrease in fat and lean mass increase exposure to lesions and infections at the insertion site. In addition, the elderly person has a natural hardening of the venous wall, which means that they do not have adequate blood reflux for intravenous therapy and there is greater difficulty in 'finding' the vein of these patients.

The selection of the puncture site also undergoes careful analysis, as it is not any place that the professional can puncture the elderly, the first options for choosing the insertion site were the forearm and dorsum of the hand veins, they were also mentioned in the study of the veins located in the arm and the cubital fossa, the choice of the catheter insertion site was also directly linked to the mobility and autonomy of the elderly and also to avoid accidental removal of peripheral venous access, avoid new punctures, facilitate the work of the Nursing team and reduce the stress of the elderly, as the elderly under stress conditions and submitted to puncture pain, may have their condition worsened due to the comorbidities that are normally accompanied.

The third topic of the study addresses the choice of device, it is extremely important as there are some specific recommendations for the elderly, the National Health Surveillance Agency (ANVISA), with quality of evidence II, says that the duration should be considered of therapy, viscosity, fluid components and conditions of peripheral venous access²⁶, as observed by study participants who, among other aspects, consider the nature of the intravenous solution to be infused to make the choice of catheters.

It is noteworthy that needled catheters (Scalp) should only be for situations such as blood sampling, for the administration of single doses or bolus of medication and should be removed immediately after the end of the administration, as they increase the risk of injury to the vein and infiltration in the elderly. On the other hand, needle catheters (Jelco) are easy to insert, more stable, allow more mobility for the patient and can thus remain inserted for longer²⁶.

Another extremely important factor mentioned in this study was the relationship between the length of the catheter and the tortuosity of the vein in the elderly, as if the tip of the inserted catheter encounters an internal wall of the vein, it will certainly contribute to irritation of the endothelium and, consequently, loss of venous access.

That said, the Nursing team addressed in the study in question showed a preference for using smaller sizes for administering large-volume parenteral solutions and larger sizes for infusing antibiotics. However, it did not highlight the chemical characteristics of the drugs used, when reporting



on the relationship between antibiotics and risk of device obstructions, as it must be considered that not all antibiotics can increase the occurrence of this event².

Adults – In this topic, we will address the quality and quality indicators of nursing care in peripheral venous catheterization, we will use as a basis the ANVISA manual and an article from the VHL regarding the quality indicators of this care in a philanthropic hospital in Paraná, with care to SUS patients. For data collection in this study, a sector of male and female wards was used for the care of patients in clinical and surgical specialties, exclusively for SUS care, which has a total of 44 beds.

Although this study does not specifically focus on the standardized insertion in the Anvisa manual and many studies were not found concerning the practice of insertion in adults, but in children and the elderly, we can base some results found in this with the manual that regulates the practice, as some of the adverse reactions that patients had in this study. The incidence of post-infiltrative skin lesions was only 2%, that is, 98% of the patients did not present hematomas or drug infiltrations. This shows that, despite failures in the identification of devices, the team performs the necessary care for the procedure and maintenance of access. A study showed that the occurrence of infiltration is the main cause of changing the peripheral venous access (53%), which allows us to conclude that there are several elements in addition to direct nursing care that help in this result, such as inadequate catheter installation, drug reaction, absence of observation of the site, occurrence of seroma and poor peripheral perfusion.

Comparing this result found in the article in question with the ANVISA manual, it can be said that the success in the absence of lesions such as infiltrations, phlebitis, hematomas, resulted from a practice of proper insertion of the venous catheter, being used by professionals of this institution all the norms and standards that guide the practice of insertion, washing hands properly with soap and water, choosing the correct device and the right caliber for the puncture, choosing the insertion site always seeking the best location and improving it venous caliber, antisepsis correctly performed with 70% alcohol or 0.9% chlorhexidine gluconate, and the use of procedure gloves at the time of puncture.

Conclusion

It was concluded in this study that despite the professionals having a manual that guides the practice of

venipuncture, we can see in the selected and analyzed articles that many professionals, despite all technical and scientific knowledge, do not carry out the practice of peripheral venous catheter insertion in a proper way. adequate, consequently generating risks for the patient, generating phlebitis, bruises, edema, infiltration, which may worsen the patient's condition.

Although venipuncture is a routine and very important practice for the patient's recovery and therapy, we do not see many studies carried out on the practice of insertion in adults, only in pediatrics where they are addressed in addition to insertion topics. We see that PICC is widely studied in neonatology, professionals choose to perform PICC because there are fewer complications during insertion in children.

In the literature, on the other hand, there is a greater number of complications in the literature due to inadequate practice of venipuncture, as the elderly naturally have characteristics that make it difficult at the time of insertion, such as loss of collagen, hardening of the vascular wall, often dehydrated, making it difficult the blood flow.

The ANVISA manual recommends that, for a quality insertion, the professional must follow some protocols to avoid and minimize these complications, such as: Hand hygiene with soap and water, using 70% alcohol after washing, choosing the appropriate device for the size venous injection of the patient so that no extravasation occurs in the venous wall, choice of puncture insertion site, use of procedure gloves even after proper hand hygiene to minimize the risk of contamination, antisepsis of the site with chlorhexidine or 70% alcohol at the insertion site and do not touch the same after cleaning.

As a product, a self-explanatory folder was created based on the standards and recommendations of the same manual mentioned above to be distributed in health units that commonly perform this practice, always aiming to provide adequate information for the professional who will carry out the practice, especially geared towards patient safety, as minimizing risks and patient exposure, we will have quality nursing care.

Despite having obtained few studies on the insertion of peripheral venous catheters, the study managed to achieve the objectives proposed with the articles found in the VHL. It is recommended later that more studies related to the themes be carried out.

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