EVALUATION OF CLINICAL GUIDELINES FOR CARE WITH CENTRAL CATHETER OF PERIPHERIC INSERTION IN NEONATES

AVALIAÇÃO DE DIRETRIZ CLÍNICA PARA CUIDADOS COM CATETER CENTRAL DE INSERÇÃO PERIFÉRICA EM NEONATOS

EVALUACIÓN DE LAS DIRECTRICES CLÍNICAS PARA EL CUIDADO CON CATETER CENTRAL DE INSERCIÓN PERIFÉRICA EN NEONATOS

Priscila Mingorance¹, Luciana Souza Marques De Lazzari², Derdried Athanasio Johann³, Mitzy Tannia Reichembach Danski⁴

ABSTRACT

Objective: to assess the knowledge by staff before and after training on care of peripherally inserted central catheter. Method: descriptive quantitative research conducted in the neonatal intensive care unit of a university hospital in Curitiba / PR / Brazil, with the nursing staff. Three questionnaires were used to collect data. We analyzed the data using the Excel® software, resulting in average scores. The research project was approved by the Research Ethics by CAAE No. 0048.0.091.000-07. Results: in general knowledge quiz and inserting the averages rose. As for maintenance was subtle decline. Conclusion: Employees partially adhered to the training and use of clinical guidelines; knowledge suffered partial amendment for more, which may be explained by training with short duration of time and teacher-student relationship negligible. Descriptors: Neonatal Nursing; Newborn; Central Venous Catheterization; Technology; Training.

RESUMO

Objetivo: avaliar o conhecimento pelos funcionários antes e após capacitação sobre cuidados com o cateter central de inserção periférica. Método: pesquisa quantitativa descritiva, realizada na unidade de terapia intensiva neonatal de hospital universitário de Curitiba/PR/Brasil, com a equipe de enfermagem. Utilizaram-se três questionários para a coleta de dados. Analisaram-se os dados por meio do software Excel®, resultando as pontuações em médias. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa mediante CAAE no 0048.0.091.000-07. Resultados: no questionário de conhecimentos gerais e inserção as médias elevaram-se. Quanto à manutenção houve declínio sutil. Conclusão: os funcionários aderiram parcialmente à capacitação e uso da diretriz clínica; o conhecimento sofreu alteração parcial para mais, fato justificado pela capacitação com curta duração de tempo e relação docente-aluno ínfima. Descriptores: Enfermagem Neonatal; Recém-Nascido; Cateterismo Venoso Central; Tecnologia; Capacitação.

RESUMEN

Objetivo: evaluar el conocimiento por parte del personal antes y después de la capacitación en el cuidado del catéter central de inserción periférica. Método: investigación cuantitativa descriptiva realizada en la unidad de cuidados intensivos neonatales de un hospital universitario de Curitiba / PR / Brasil, con el personal de enfermería. Los empleados parcialmente adheridos a la formación y el uso de guías de práctica clínica, el conocimiento sufrió modificación parcial de más, lo que puede explicarse por el entrenamiento con el corto periodo de tiempo y la relación profesor-alumno insignificante. Descriptores: Enfermería Neonatal; Recién Nacido; Cateterismo Venoso Central; Tecnología; Capacitación.

¹Nurse, Master, Graduate Program in Nursing, Federal University of Paraná. Curitiba (PR), Brazil. E-mail: prinping@yahoo.com.br; ²RN, Nursing, Federal Institute of Paraná. Curitiba (PR), Brazil. E-mail: derdriedjohann@hotmail.com; ³Nurse, Hospital de Clínicas, Federal University of Paraná. Curitiba (PR), Brazil. E-mail: luciana.marques88@hotmail.com; ⁴Nurse, Professor, Graduate and Postgraduate Nursing, Federal University of Paraná. Curitiba (PR), Brazil. E-mail: profa.mitzy@ufpr.br
INTRODUCTION

Hospitalized patients require specific care to maintain the well-being and improve the clinical and nursing staff is responsible for developing them. In order to improve the care provided, nursing professionals must constantly update themselves. The example is the development of clinical guidelines that assist the practice with recommendations to provide care grounded in the relevant scientific literature.

The use of technology in care for patients with high clinical complexity ensures a care need. In the intensive care unit (ICU), are commonly intravenous devices, among which stands out the Peripherally Inserted Central Catheter (PICC). The PICC and clinical guideline technologies are considered, namely: hard (concrete materials); soft-hard (constructed knowledge) and mild (interpersonal relationships). 1,2

The PICC is an intravenous device inserted into a peripheral vein with characteristics of central venous access because its proximal portion lies mainly in the vena cava; 3 can be inserted in neonates, children and adults. 4 Its insertion is one of the private activities of the professional nurse through legal support granted by Resolution COFEN - 258/2001 5 provided they are qualified to perform this procedure.

The PICC has benefits such as reduced number of punctures per day, with consequent minimization of pain in patients, stable venous access, ease of insertion when compared to central catheters, reducing the risk of mechanical and infectious complications, among others 6,7 Although it has several benefits, the PICC can lead to complications for the patient hospitalized and debilitated due to the clinical picture. PICC-related complications are classified as local or systemic, depending on the size of their effects, including: treat yourself to an invasive procedure, and possible infection in the bloodstream. 7

The importance of researching the subject of PICC is highlighted by its increased use and after observing the data found in national and international literature related to the complications entailed by the use and consequences of erroneous handling of the PICC, it emphasizes the importance that enable knowledge nursing staff. It is that continuing education on the subject assists in theoretical knowledge and technical skills of the professional, requiring constant updating. 7

Thus professionals require training, which defines it as: "training a person or group of people in knowledge or in theoretical and practical application of a particular activity." 8

The evaluation of this training is needed to verify its effectiveness. The acquisition of knowledge and change of behavior are ways to assess whether the training was properly executed, it is emphasized that the evaluation after the training translates the knowledge transmitted and adsorbed.

Therefore, this study aimed to assess the knowledge by staff after training on clinical guideline for care of peripherally inserted central catheter.

METHOD

Descriptive quantitative research approach, performed in the Neonatal Intensive Care Unit of a university hospital in Curitiba / PR, with employees of the nursing staff (nurses, technicians and assistants). Data collection took place in two stages, by delivering questionnaires to employees before the training and after reapplying the same training.

Inclusion criteria were: accepting participate in the study by signing the consent form, participate in training, filling out questionnaires before and after the training. Already exclusion criteria were: refuse to participate; does not participate in the training, and to be absent during the period of data collection after training.

Three questionnaires were used as instruments of data collection: 1- general knowledge, 2- maintenance of PICC, both answered by all nursing staff, and 3- PICC insertion, this exclusive for nurses. All issues addressed multiple choice and descriptive.

The training took place in December 2010. The pre-qualification questionnaires were delivered to employees and answered beforehand. Afterwards, we proceeded to the delivery of questionnaires two months after the training (in March 2011); only those employees who agreed to participate in the first stage and continued research spontaneously.

The training took place in modules lasting about 30 minutes each, covering concepts and care actions (insertion, maintenance and removal) to the PICC. Occurred at the site of the service and had the support of the nurses in the sector; officials reached the morning and afternoon shifts and the three groups of employees nighttime. The modules were offered by two researchers adequately trained to do so. There was need for the module more than once per shift, the number of
participants varied according to availability of staff at the time.

The learning process was mediated by active methods that enabled the interaction between researchers and employees with questions regarding personal and professional. After the training, provided is a copy of Clinical Guideline for Peripherally Inserted Central Catheters in Neonates query for all employees, and explanatory brochure on the topic.

The correction and analysis of questionnaires, based on information submitted by the Centers for Disease control prevention a 200210 and 201111, and national and international literature consulted, compiled in Clinical Guideline for Peripherally Inserted Central Catheter, the main theme of the training delivered and summarized in the employees conduct hygiene during maintenance in the questionnaire of nurses, obtained mean score of 72.7 before training and after 64.74, while nursing assistants and technicians had a mean of 62.5 before and 58.3 after training (Table 01).

When asked specifically about hand hygiene questionnaire during maintenance in pre-training test 100% of nurses admitted conduct hygiene before handling and a respondent admitted not performing after handling the device, the test post-training data were like. As for the answers from the questionnaire of assistants and technicians, it was found that the pre-training test, 100% answered that make this care before handling, and 93.33% perform hand hygiene after handling the device. With regard to these questions in the post-training test, which has 96.67% of the employees conduct hygiene before handling and 3.33% not reported; following manipulation 83.33% performed careful, 13.34 % admitted not performing and 3.33% did not.

Regarding the use of gloves when handling the device, it was found that 55.55% of the nine nurses’ respondents did not use the pre-training test and 44.44% uses. In the post-training test 75% of nurses use glove when handling the device, 12.5% and 12.5% do not use not reported. Of auxiliary and technical pre-qualification 23.33%, admitted using a glove when handling the PICH, and others (76.67%) do not use the glove. After training it was found that 13.33% respondents use the glove, 83.34% and 3.33% did not use not reported.

All respondents (nurses, technicians and assistants) reported performing disinfection of connections, predominantly alcohol use 70%, with 96.67% before and 90% after training.

In the description of the information required for the registration to the PICH were cited insertion site, insertion time and date, drug infusion, skin integrity, externalization, migration, length, presence or absence of exudate and inflammatory signs, aspect of the site insertion time of infusion of medication, performing flush ebb and flow of blood, permeability, switching of connections, and setting the curative aspect, exchange and type of dressing, conducting disinfection. It is noteworthy that all the points covered in the guideline were reminded; however, 66.67% of respondents left this question blank (before and after training).
The mean score obtained by the nurses to answer the questionnaire insertion was 67.22 before training and 73 after the same, as shown in Table 01. The personal protective equipment to be used during the insertion procedure were not marked correctly, apparel featuring the most frequent error in the issues addressed in the order insertion technique. It is noteworthy that the guidance to parents was sometimes performed by professional 66.66%, 22.22% and 11.12% not guided not answered, after training all (100%) began to perform the orientation. During the insertion procedure the solution used was chlorhexidin before and after training.

Table 1. Mean score obtained in the questionnaires of general knowledge, maintenance and PICC insertion, 2011.

<table>
<thead>
<tr>
<th>Individuals</th>
<th>General Knowledge</th>
<th>Maintenance</th>
<th>Insertion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>After</td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>Nurses</td>
<td>79.8 (n=10)</td>
<td>83.1 (n=8)</td>
<td>64.74 (n=8)</td>
</tr>
<tr>
<td>Technicians and assistants</td>
<td>88 (n=30)</td>
<td>92 (n=30)</td>
<td>62.5 (n=30)</td>
</tr>
</tbody>
</table>

DISCUSSION

There was an improvement of the knowledge acquired throughout the nursing staff, referring to general knowledge, as presented in Table 01. There was a relevant improvement of responses to insertion of the PICC, with issues related to the insertion procedure and knowledge of the preference of professionals who insert the device, the reality and routines of the unit. However, there was decline in batting average when asked about the maintenance of the device.

Related to care during dressing change, an issue which presented several errors from nurses, demonstrates ignorance of international guideline, which recommends the use of sterile gloves and skin antisepsis with chlorhexidin 0.5% in However studies have not yet developed a high degree of scientific evidence as to the supremacy of chlorhexidin over other antiseptics in children under two months. 11

As for the disinfection of connections observed using 70% ethanol, supporting the literature, which indicates the use of antiseptic before each handling, and 0.5% chlorhexidin and 70% alcohol those recommended; highlights it is the realization of tubes friction for 30 seconds is practice before handling. 11

There was a high amount of forms unanswered the question relating to the registration of the observations and procedures, therefore, highlight the importance of recording all the information observed and performed in relation to the PICC, and other practices, due to legal support team before registration. Points out that the record should be complete, concise, precise, clear and contain appropriate language who will read these informations. 12

Appropriate hand hygiene before and after handling the device, most employees said performing this care, thus corroborating with the recommendations by authors, 13 that when considering the presence of a central catheter as a primary risk factor for infection chain blood in very low birth weight neonates, it is necessary correctly handling the device in the prevention of infection and the action that best helps that prevention is proper hand hygiene before and after each use of the device. 11 It is advisable, in addition to hand hygiene, use of aseptic technique during insertion, as well as in handling the intravenous device, a practice that minimizes the risk of catheter-related infection. 11

The use of sleeve procedure while handling the PICC was little seen in this research. This practice deserves attention because it is a personal protective equipment and aims to protect the professional. Should be used when the professional comes into contact with blood, body fluids, excretions, and contaminated items, as well as touching mucous membranes and skin does not include, in addition to providing a barrier between the person and the professional, 14 highlighting the importance in handling the device.

It is observed that the use of personal protective equipment for the insertion of the device was a matter of common error on the part of nurses, a fact that is due to lack of knowledge of the practices advocated. 11 We emphasize the importance of using equipment such as sterile barriers cap, mask, gown, and gloves fields.

The guidance for parents, not always performed by nurses before training, started to be used in 100% of cases after training. Given the importance of this insertion device for the recovery of the neonate, it is essential guidance for parents and / or guardians about the use of it, the advantages and disadvantages as well as the indication of the same. It is worth highlighting the importance of signing the Consent by family responsibility, necessary to support the professional and

ISSN: 1981-8963
DOI: 10.5205/reuol.4164-33013-1-SM.0706201307
E-mail: mingorancep@gmail.com
Funding: National Council for Scientific and Technological Development (CNPq)
...
CONCLUSION

It was noted slight improvement of the knowledge acquired by nurses and staff in general knowledge quizzes and integration, however the means obtained in the questionnaire device maintenance were lower in the test after training. It was felt that staff adhered partially to the training and use of clinical guidelines, and that knowledge was altered for more. Partial compliance is justified by training with short duration of time and teacher-student relationship negligible.

The subjects showed deficits that should be prioritized for continuing education, showing future paths to be studied and taught. Active methods must be addressed with dynamic motivation explaining the importance of the practices conveyed, because even knowing them and their need, the care is not performed as often as recommended.

The result of this evaluation provided subsidies nurses sector to restructure the teaching process in the unit, as well as other professionals who wish to resolve the difficulties raised and answer questions consistent with professional practice.

ACKNOWLEDGEMENTS

Study with the support of the National Council of Scientific and Technological Development / Institutional Program for Scientific Initiation Scholarships / CNPq PIBIC / UFPR Notice 2010-2011. Curitiba (PR), Brazil.

REFERENCES


