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PREVENTION OF URINARY INFECTION: QUALITY INDICATORS OF NURSING ASSISTANCE IN ELDERLY

PREVENÇÃO DE INFECÇÃO URINÁRIA: INDICADORES DE QUALIDADE DA ASSISTÊNCIA DE ENFERMAGEM EM IDOSOS

PREVENCIÓN DE INFECCIÓN URINARIA: INDICADORES DE CALIDAD DE LA ASISTENCIA DE ENFERMERÍA EN ANCIANOS

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ABSTRACT

Objective: to analyze Nursing care, from indicators, focused on the prevention of urinary infection. **Method:** prospective, quantitative-based study, with the scope to measure direct observation of patients using an active search registry instrument. A total of 258 patients were observed and descriptive statistics were used to verify the percentage of adequacy of care observed in relation to the quality standard proposed for the indicators. **Results:** the QA was "Adequate" for the indicators *Identification of the Vesical Delay Probe (VDP)* and *Positioning of the collection bag*. The indicator, *Adequate fixation of VDP* had a borderline QA. **Conclusion:** the care process related to the prevention of urinary tract infection needs more attention, investing in continuing education, with the practice of evidence-based care, with a view to safe and harmless care. **Descriptors:** Health Care Quality; Quality Indicators, Health Care; Patient Safety.

RESUMO

Objetivo: analisar a assistência de Enfermagem, a partir de indicadores, com foco na prevenção da infecção urinária. **Método:** estudo prospectivo, de abordagem quantitativa, com o escopo de mensurar a observação direta de pacientes, utilizando-se um instrumento de registro de busca ativa. Foram observados 258 pacientes e utilizada a estatística descritiva, para verificar o percentual de adequação dos cuidados observados em relação ao padrão de qualidade proposto para os indicadores. **Resultados:** a QA apresentou-se "Adequada" para os indicadores *Identificação da Sonda Vesical de Demora (SVD)* e *Posicionamento da bolsa coletora*. O indicador *Fixação adequada da SVD* teve uma QA Limítrofe. **Conclusão:** o processo de cuidado relacionado à prevenção de infecção do trato urinário necessita de maior atenção, investindo-se em educação continuada, com a prática do cuidado baseado em evidências, com vistas a uma assistência segura e livre de danos. **Descritores:** Qualidade da Assistência à Saúde; Indicadores de Qualidade em Assistência à Saúde; Segurança do Paciente.

RESUMEN

Objetivo: analizar la asistencia de Enfermería, a partir de indicadores con foco en la prevención de la infección urinaria. **Método:** estudio prospectivo, de abordaje cuantitativo, con el alcance de medir la observación directa de pacientes utilizando un instrumento de registro de búsqueda activa. Se observaron 258 pacientes, y se utilizó la estadística descriptiva, para verificar el porcentaje de adecuación de los cuidados observados en relación al patrón de calidad propuesto para los indicadores. **Resultados:** la CA se presentó "Adecuada" para los indicadores *Identificación de la Sonda Vesical de Demora (SVD)* y *Posicionamiento de la bolsa colectora*. El indicador, *Fijación adecuada de la SVD* tuvo un CA Limítrofe. **Conclusión:** el proceso de cuidado relacionado con la prevención de infección del tracto urinario, necesita de mayor atención, invirtiéndose en educación continuada, con la práctica del cuidado basado en evidencias, con vistas, a una asistencia segura libre de daños. **Descriptor:** Calidad de Atención de la Salud; Indicadores de Calidad de Cuidado de la Salud; Seguridad del Paciente.

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INTRODUCTION

The quality of Nursing care has been discussed and shared for some time, mainly due to the growing awareness that it is a fundamental requirement for the economic survival of health institutions, as well as being an ethical, professional and social responsibility. In this sense, the quality evaluation allows the quantification and recognition of a particular problem and points out the action necessary for this event not to happen, reducing the incidence of adverse events.¹

An integrative review study, carried out by Caldana,² on performance indicators in a hospital Nursing service, showed that several indicators have been used by nurses, allowing monitoring and intensification of strategies aimed at improving the quality of Nursing care.

When aiming at the use of indicators as a tool to assess the quality of Nursing care, we must adopt standards to measure and compare the quality of care, as it will serve as a reference, acting as a pillar for the evaluation process. The intention is to standardize and make the process of evaluating care an integral part of Nursing care and not just another task to be fulfilled. It is a question of making the results available as a tool, for the systematic evaluation of the Nursing care process, in an effective way.³

A major public health problem related to the care of Nursing care concerns the infections contracted during procedures performed in health care, with Nursing being the main responsible for the control and control of infections, due to direct care to the patient.⁴

Among the infections, the incidence of those related to the urinary tract corresponds to 35% to 40% of all hospital infections, being 70% to 88% directly related to bladder catheterization and 5% to 10% after cystoscopy or surgical procedures. With handling of the urinary tract, especially in environments such as ICUs and Semi-UTIs. This occurrence prolongs the hospitalization time, increases the cost of hospital admissions, potential complications, and increases morbidity and mortality.⁵

Older age, female gender, anatomical dysfunctions and severe underlying diseases are among the major risk factors associated with UTIs (Urinary Tract Infections). But undoubtedly, the vast majority of these infections, about 80%, are associated with urinary tract catheterization, duration,

manipulation, positioning, and flow assurance.⁶

In the elderly, urinary tract infections are the most common cause of sepsis and are responsible for high morbidity and mortality rates. In these patients, the presence of previous urinary tract infections, use of delayed bladder catheters, other concomitant diseases, institutionalization and decline in cognitive status are associated with worse prognoses.⁷

In this sense, the prevention of infection is essential in the quality of health care for this population. One way of prevention is by assessing the quality of care practices by formulating clinical indicators. They are quantitative measures of desirable or undesirable outcomes of a given process or system and should be measured continuously or periodically, of objectives.⁶

Given this, Nursing plays a fundamental role in the prevention of urinary tract infection, this study will emphasize three indicators of the quality of Nursing care, related to care that help in prevention: adequate fixation; correct positioning of the collection bag, to guarantee the flow of urine and the correct identification of the bladder catheter.

OBJECTIVE

- To analyze nursing care, from indicators, focused on the prevention of urinary tract infection.

METHOD

A prospective, quantitative approach, with the scope to measure, identify and compare the indicators of quality assessment of Nursing care, related to bladder catheterization before and after the implantation of an instrument for recording indicators in the routine of the sector studied.

It is important to emphasize that the implementation of the instrument was carried out from another study, this one only has the intention of evaluating and comparing the quality of the assistance provided before and after this implantation.

The study was carried out in the emergency of a public hospital, in the Federal District, of the Unified Health System (UHS), at the Neurocardiovascular Center, a reference in neurological and cardiological emergencies in the Federal District and surroundings. The sector counts on a cadre of 65 Nursing servers, being 17 nurses and 48 Nursing technicians.

Data were collected from July 2015 to February 2016, on random days, and elderly

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patients, older than 60 years, of both sexes, with more than 24 hours of admission, regardless of diagnosis, were included.

For the sample calculation, we used a 99% confidence level and a sample error of 5% 8. After applying the sample calculation formula, a total of 129 patients were found by data collection, which considers the research feasible.

In the data collection, the instrument was developed, developed and validated by Vituri³ entitled "Active Search Registry". This instrument was validated, by the content validation strategy by specialists in the area of quality assessment of Nursing care and consists of twelve quality indicators: 1 - identification of the inpatient hospital bed; 2 - risk for bed fall; 3 - identification of peripheral venous accesses; 4 - identification of post-infiltrative skin lesions; 5 - identification of equipment for venous infusion; 6 - identification of serum flasks and infusion rate control; 7 - identification of gastric probes; 8 - fixation of the delayed bladder catheter and positioning of the diuresis collecting bag; 9 - check of Nursing procedures in the medical prescription; 10 - verification of vital signs control; 11 - check of procedures in Nursing prescription; And 12 - elaboration of the daily and complete prescription by the nurse. The focus of this

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work is the evaluation of assertions related to delayed vesical soda, that is, item 8.

Data were collected on the indicators selected to evaluate the quality of Nursing care, related to the care of the bladder catheter for delay, in two different moments. The first collection was performed before the implantation in the sector of the instrument "Active Search Registry" and the second, one month after the implantation of the same one in the sector.

The identification of the bladder catheter was considered correct, containing the date, time of insertion, catheter number, amount of water in the cuff and the name of the nurse responsible for the procedure. Regarding adequate fixation, it was considered correct when in man the catheter fixation is located in the hypogastrium, and in the woman on the inner side of the thigh. For the collection bag below the bladder, it was considered correct when the collection bag was located below the level of the bladder.³

Data was tabulated in Microsoft Office Excel®. As a standard of quality, the parameters were used where the Nursing care is qualified from the Index of Positivity (IP) of each indicator evaluated. The Quality of Service (QA) of the indicators was categorized according to the IP, as shown in the figure 1:

Quality of care (QC)	Positivity index (PI)
Desirable care	100% positive
Adequate care	90 to 99% of positivity
Secure care	80 to 89% of positivity
Border care	71 to 79% of positivity
Sufficient care	70% or less of positivity

Figure 1. Criteria for classification of Nursing care quality. Brasília (DF), Brazil, 2016.

The research project was submitted to the Research Ethics Committee of the Health Sciences Teaching and Research Foundation, State Health Secretariat, Brasília, Federal District (CEP / FEPECS / SES-DF), and approved by the CAAE: 45794115.8.0000.5553 . Patients and / or caregivers who agreed to participate in the research were informed about the reliability, objectives and due purposes of the research and received a Free

and Informed Consent Term (FICT), and may or may not participate in the research according to their wishes.

RESULTS

The data referring to the observation of 256 patients hospitalized, during the stipulated period, are shown in table 1, with 129 patients in each data collection.

Table 1. Quality of Nursing care from indicators. Brasília (DF), Brazil, 2016.

INDICATORS	Observed values				
	Number of observations	Adequate answers	Inadequate and absent answers	PI (%)	QC
Proper SVD identification					
Collection 1	102	97	05	95.1%	Adequate
Collection 2	126	120	06	95.2%	Adequate
Fixing the proper SVD					
Collection 01	102	57	45	55.9%	Sufferable
Collection 02	126	93	33	73.8%	Bordering
Positioning of the Collecting Bag					
Collection 1	102	82	20	80.4%	Secure
Collection 2	126	123	03	97.6%	Adequate

*PI: Positivity Index
**QC: Quality of care

Regarding the identification of the delayed bladder catheter, the positivity index considered "adequate" was reached in the two collections performed. Regarding its fixation, indices well below the Ideal Conformity Index (ICI) were observed in both data collections, and the quality of the "poor" care was applied in the first collection and "borderline" in the second.

Regarding the correct positioning of the diuresis collecting bag, to guarantee an adequate flow, in the two collections the ICI of 100% in the unit evaluated was also not reached. The first collection showed the quality of care considered "safe" and the second, "adequate".

DISCUSSION

Since the accomplishment of the urinary catheter passage and the follow-up of the care with it is an item of Nursing work and a component of maintenance of the safety and quality assurance of the care provided to the patient, this procedure must be performed in the clinical practice of the profession with the standardization, required to generate a minimum standard of sufficient quality for safe care.⁹

Several risk factors are responsible for the high prevalence of bacteriuria associated with the late catheter. Among them, sex, advanced age and coexisting serious illness. The advanced age and the coexistence of a serious illness, in catheterized and hospitalized patients, are important risk factors that even increase the mortality rate. In addition to these, there are factors of laughs that can be altered, such as indication for catheterization, catheterization duration, catheter care and cross-contamination. In these aspects, the Nursing team must act to provide quality care free of infections.¹⁰

The Nursing record is legal support of the professional, provides the continuity of Nursing care provided to the patient and constitutes a factor of extreme relevance in the practice of the profession.¹¹

Nursing team annotations are considered as the main means of communication among all health staff and are directly related to patient safety and quality of health care provided, as well as indicating the actions, procedures and guidelines provided to the patients. Information for their continuity and planning according to their needs. When done correctly, records facilitate information for continuity of care, optimizing time, reducing costs, avoiding inadequate work processes, thus, ensuring the quality of health services.¹¹

Opposite to the two data collections, where more than 95% of the catheters were identified, in a 2011 study in some health institutions, correct registration of the bladder catheter was mentioned by only 55.5% of the institutions surveyed, And only 33.3% referred, in addition to the record in the chart, the annotation in the urine collector, with data referring to the date of insertion of the catheter and identification of the professional responsible for the urinary catheterization (name, function and identification with the Regional Nursing Council). Another information from this study is that 22.2% use for this annotation a self-adhesive label standardized in the service, which is glued to the urine collection bag.⁹

In relation to the pre-established period for the delayed bladder catheter to be changed in order to prevent infections, the most current studies indicate that it is not recommending fixed intervals of exchange, emphasizing as an ideal procedure regular and constant evaluations so that the presence of signs that indicate the exchange of the whole system is detected in a timely manner. Hence the importance of the nurse's registration and surveillance, a professional directly responsible for the care related to this device.⁴

Despite this, the literature poses that the risk of acquiring bacteriuria is around three to 10% per day of catheter permanence. Thus, the duration of catheterization should be

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reduced, although no literature defines a maximum length of stay.⁴

The duration of catheterization is probably the most important risk factor in the establishment of bacteriuria associated with the catheter of delay. Epidemiological studies have clearly demonstrated that the risk of urinary tract infection, associated with the delay of catheter, is related to the duration of catheterization. A progressive bacteriuria has been found in patients with a catheter of delay. Thus, it was verified that, when the microbial count was initially the lowest detectable, in 90% of cases there was an increase to 105 colonies / ml of urine within three days.¹⁰

Another important item in the prevention of infections related to urinary catheter use, concerns the manipulation of the bladder catheter delay. It is necessary to reflect on the importance of correct handling of the bladder catheters, emphasizing the knowledge about the indications and the risk of this procedure, together with the responsibility in the manipulation of this device.¹²

Evidence has been identified, in the studies associated with Nursing care, in the prevention of UTI, and it is essential that they surpass the technique. Risks must be constantly evaluated; hand hygiene practices must be carried out carefully; the anatomical conditions of each patient should always be taken into account when fixing and handling, as well as the education of the patient and his / her relatives.⁴

A high index of nonconformity was found regarding the adequate fixation of the bag, considered to be poor at the first data collection, and borderline at the second. This fact contributes to the trauma of the urethra, reflux of the contents, risk of urinary infection and, consequently, nosocomial infection.

In the Chaves study¹², adequate fixation presented 17% of compliance and 83% of nonconformity. The positioning of the collection bag reached 97% of compliance and 3% of nonconformity, which is in line with this study, where it was verified, in the second data collection that 97.6% of the collection bags were properly positioned. It is observed that the maintenance of the collecting bag, below the level of the bladder, is a very widespread and applied care.

In addition to the collection bag below the level of the bladder, the drainage system should be closed, and the connection of the catheter with the collection tube should not be disconnected, as this increases the risk of contamination. The hospital environment constitutes a reservoir and vehicle for

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nosocomial infection. Cross-contamination among catheterized patients is an important way of disseminating infection by *Serratia marcescens*, *Proteus* and *P. aeruginosa*. Likewise, other extrinsic sources, such as pockets used to collect urine from collectors, solutions and irrigation, fluids, have been epidemiologically blamed for bacteriuria associated with the catheter.⁴

In this sense, it is emphasized that the control and prevention of catheter-related UTIs, need a range of measures. The implementation and the evaluation of infection control programs and protocols must be continuous, and therefore, it is the nurse's responsibility to intervene. Which may have as their primary goal the quality of life and the safety of patient care.

Older age is one of the risk factors for UTIs, so, prevention is the best strategy for inpatients. Measures such as the elaboration of the protocol on bladder catheterization and investment in continuing education for the Nursing and medical staff contribute to the adequacy of the procedure, from the insertion and manipulation of the bladder catheter.¹³

CONCLUSION

Due to the quality of care, considered borderline regarding the adequate fixation of the bladder catheter, it is indicated the need for training measures in this area in order to sensitize the Nursing team of the studied unit regarding the importance of preventive measures of urinary infection Related to delayed bladder catheterization.

It was possible to verify a significant improvement of the overall performance of the Nursing team of the unit evaluated, after the active search registry was implemented and the occurrence of educational measures after the first data collection. In addition, there has been an improvement in the individual performance of the indicators, although there is still a long way to go in achieving the ICI, which is 100% in all indicators.

To reach this goal, it is necessary that the nurses of the studied unit become aware of their role as educators and do not delegate to the sector responsible for continuing education or coordinators of the sector all the responsibility for the training of their staff. It is up to the assistant nurse to lead their team, in order to guide and supervise, which makes his team more and more aware and translates into a greater involvement / commitment with the quality of care and prevention of adverse events.

In order to prevent infections, it is clear that the Nursing team needs to identify the bladder catheter care as a complex and routine procedure. In this sense, the evaluation processes have the purpose of monitoring the quality of care provided to the patient, assisting the leadership in the decision-making processes and empowering the unit's care nurses to develop evidence-based problem-solving strategies directed to the problems encountered.

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