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Preoperative nursing visit checklist: data quality assessment

Checklist da visita pré-operatória de enfermagem: avaliação da qualidade dos dados

Checklist de visitas preoperatorias de enfermería: evaluación de calidad de datos

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Abstract: Aim: to evaluate the quality of the preoperative nursing visit *check list* data in a university hospital in northeastern Brazil. **Method:** cross-sectional study from July to December 2017. The parameters non-fulfillment and reliability of data were used. For the calculation of incompleteness, the scoring system proposed by Romero and Cunha was adopted. Reliability was measured by the *Kappa* indicator. **Results:** 203 preoperative visit sheets were analyzed; 68.2% of the variables (15 of 22 variables analyzed) had a percentage of non-fulfillment ranging from >5% to 9.9%, classified as very low/low non-fulfillment. Considering the *Kappa* values, 81.8% of the studied variables had data reliability considered almost perfect. **Conclusion:** The quality of the preoperative visit *check list* data is satisfactory, since the non-fulfillment of most of the analyzed variables is very low/low and the agreement analysis indicated that the information is robust and reliable.

Descriptors: Perioperative care; Perioperative nursing; Preoperative care; Data Accuracy

Resumo: Objetivo: avaliar a qualidade dos dados do *check list* da visita pré-operatória de enfermagem em um hospital universitário do nordeste brasileiro. **Método**: estudo transversal no período de julho a dezembro de 2017. Utilizou-se os parâmetros incompletude do preenchimento e confiabilidade dos dados. Adotou-se para o cálculo da incompletude, o sistema de escores proposto por Romero e Cunha. A confiabilidade foi medida pelo indicador *Kappa.* **Resultados:** analisadas 203 fichas de visitas pré-operatórias; 68,2% das variáveis (15 das 22 variáveis analisadas) tiveram percentual de não preenchimento que variou entre >5% a 9,9%, classificadas como muito baixa/baixa incompletude. Considerando os valores *Kappa*, 81,8% das variáveis estudadas tiveram confiabilidade

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dos dados considerada quase perfeita. **Conclusão**: a qualidade dos dados do *check list* da visita pré-operatória é satisfatória, uma vez que a incompletude da maioria das variáveis analisadas é muito baixa/baixa e a análise de concordância apontou que as informações são robustas e fidedignas.
Descritores: Assistência perioperatória**;** Enfermagem perioperatória; Cuidados pré-operatórios; Acurácia dos dados

Resumen: Objetivo: Evaluar la calidad de los datos del *check list* de la visita de enfermería preoperatoria en un hospital universitario del noreste brasileño. **Método:** estudio transversal de julio a diciembre de 2017. Utilizaron los parámetros de incompletitud y fiabilidad. Para cálculo de incompletitud, se adoptó el sistema de puntuación propuesto por Romero y Cunha. La fiabilidad se midió por indicador *Kappa*. **Resultados:** analizaron 203 hojas de visitas preoperatorias; 68,2% de las variables (15 de 22 variables analizadas) tenían un porcentaje de incumplimiento que oscilaba entre >5% y 9,9%, clasificado como muy baja/baja incompletitud. Teniendo en cuenta los valores de *Kappa*, 81,8% de las variables estudiadas tenían la fiabilidad de los datos casi perfecta. **Conclusión:** La calidad de los datos es satisfactoria, ya que la incompletitud de la mayoría de las variables analizadas es muy baja/baja y el análisis de acuerdo indicó que la información es sólida y confiable.
Descriptores: atención perioperatoria; Enfermería perioperatoria; Cuidado preoperatorio; Exactitud de datos

Introduction

Perioperative nursing care is characterized by the promotion, maintenance, and recovery of health based on the technical scientific knowledge inherent to the surgical procedure. In this context emerges the Perioperative Nursing Care Systematization (PNCS) aiming to perform systematized actions that offer greater safety in the care of people with surgical needs. Preoperative nursing visit (PNV) is an elementary step in this process.[1]

Preoperative nursing visit is part of PNCS, comprising the first stage of this system. Among the activities performed by the nurse stand out clarification and guidance on the surgery and minimization of anxiety.[2]

During the visit, the nurse needs to report to the patient in an individualized manner, focusing on his/her needs, ensuring adequate guidance, and maintaining a logical sequence of information so as to facilitate the understanding and reduce surgical risks.[3-4] In this sense, PNV emerges as a fundamental element for the patient's physical and emotional preparation, clarifying the procedure and positively impacting the entire anesthetic-surgical process.[5] It

enables a more effective interaction between nurses, patients, and families, strengthening assistance integrality in a systematic and continuous way.[1]

Health professionals must use a language that is clear, objective, and compatible with the comprehension capacity of each individual not only to prepare him/her for the surgery, but also to guide him/her as to the limitations/restrictions that may exist during and after surgery. The following are some examples of these limitations/restrictions: reactions to anesthesia; need for mechanical ventilation; use of tubes, probes, catheters; cardiac monitoring; practice of breathing exercises; occurrence of pain; administration of drugs and solutions; admission to the postanesthesia recovery room and to intensive care units; and hospitalization after the procedure.[6]

Hence, PNV is a valuable tool in individualizing perioperative care. However, some services do not use this assistance in the surgical process, or do it in a superficial and inadequate way.[4,7-8] In some cases, patient visiting is not sufficiently valued as a tool for assessing the needs of the surgical patient. This impacts the nurse-patient relationship, making it difficult to plan comprehensive, individualized, documented, and continuous care throughout the perioperative period, in addition to increasing impairments and surgical risks.[9]

Observations and daily experiences in a surgical center highlighted failures in conducting the preoperative nursing visit, which generates delay and cancellation of surgeries, emotional and physical suffering to the patient, and other nuisances. In this perspective, a problem arose with the following guiding question: What is the quality of data on the checklist of preoperative nursing visit developed by nurses who work in the surgical center? In view of this research question, it was understood that it is essential to evaluate this activity of the perioperative nurse from the instrument they use to ensure safe care to the surgical patient.

Therefore, this study evaluates the quality of data on the preoperative nursing visit checklist at a university hospital in northeastern Brazil.

Method

This is a cross-sectional study conducted in a university hospital in northeastern Brazil from July to December 2017. The perioperative form was used as a research instrument. The analysis comprised all variables (22) present in the preoperative visit checklist: 1.Patient's name; 2.Type of surgery; 3.Surgical specialty; 4.Age; 5.Weight; 6.Height; 7 .Medical record number; 8. Bed; 9.Allergies; 10. Pre-existing pathologies; 11.Daily medication use; 12.Surgical history; 13.Use of prosthesis; 14.Intestinal preparation; 15.Completed preoperative exams; 16. Blood reservation; 17. ICU reservation; 18.General patient guidelines; 19.Signed consent form; 20.Preanesthetic visit; 21.Skin integrity; and 22.Identification of the surgical site.

The parameters incompleteness of data filling and data reliability were used to assess the quality of information. Incompleteness referred to the nonfilling (blank) of the analyzed field, also considering fields filled with the category "ignored" or with number zero. The score system proposed by Romero and Cunha was adopted for the calculation of incompleteness.[10] However, nonfilling was classified as follows: very low incompleteness (filling less than 5% incomplete); low incompleteness (5.0 to 9.9%); regular incompleteness (10.0 to 19.9%); high incompleteness (20.0 to 49.9%); and very high incompleteness (50.0% or more).

The reliability of the variables was classified by the degree of agreement measured by Kappa values. For this analysis, the patient filled the checklist along with the researcher immediately after filling it along with the surgical center professional. The researcher would then compare the information to identify the agreement. To process the analysis, another database was generated with the following standardization: when the professional's response was identical to the researcher's response, it was coded (yes/yes); on the contrary, the encoding was (yes/no). To interpret the magnitude of Kappa values, the following classification was used: almost perfect agreement for Kappa between 0.81 and 1.00; excellent agreement between 0.61

and 0.80; moderate agreement between 0.41 and 0.60; poor agreement between 0.21 and 0.40; and weak agreement for values below 0.20.

Sample calculation considered the average number of surgeries performed per month (N = 425), a significance level of 5%, and a sampling error equal to 5 percentage points; therefore, the sample size was 203 records to evaluate the preoperative visit checklist. The study included adult patients of both genders, with scheduled elective surgeries, and who were aware and oriented to answer the questions. Patients excluded from the study were those who for some reason had the preoperative checklist completely blank/not performed.

Patients were approached in the reception room of the surgical center. At this moment, they were informed about the research and those who accepted to participate voluntarily signed the Free and Informed Consent Form. This research was approved by the Research Ethics Committee (Opinion 2,392,721 on November 22, 2017) and was conducted in accordance with Resolution 466/2012. Data were analyzed using the statistical program Stata 12.0.

Results

In total, 203 perioperative records were analyzed in this study. Regarding filling incompleteness, 68.2% of the variables (15 of the 22 variables analyzed) had a nonfilling percentage that ranged from <5% to 9.9%. These variables were classified as very low/low incompleteness. Moreover, 13.7% of the variables (3 of the 22 total) had an incompleteness percentage between 10-19.9% and therefore were classified as regular incompleteness. Finally, 18.1% of the variables (patient's weight and height, preanesthetic visiting, and identification of the surgical site) had an incompleteness percentage defined as high and very high (Table 1).

Table 1 - Filling incompleteness and reliability of data on the preoperative nursing visit checklist, São Luís-MA, 2017

Variable	Incompleteness in the filling of the Perioperative form (preoperative visit *checklist*)		*Kappa*	CI 95%*
	N	%		
Patient's name	01	0.49	1	0.9902-1.0000
Type of surgery	07	3.40	1	0.9328-1.0000
Surgical specialty	23	11.22	1	0.7938-1.0000
Patient's age	19	9.22	1	0.8311-1.0000
Patient's weight	63	30.58	0.9557	0.5619-0.9806
Patient's height	80	38.83	0.9798	0.5190-0.9903
Medical record number	03	1.46	1	0.9709-1.0000
Bed	01	0.49	1	0.9896-1.0000
Allergies	02	0.97	0.7979	0.9741-0.9948
Pre-existing pathologies	04	2.29	0.7953	0.9442-0.9886
Daily medication use	08	4.28	0.9385	0.9130-0.9947
Surgical history	05	2.43	0.6157	0.9242-0.9709
Use of prosthesis	03	1.46	1	0.9684-1.0000
Intestinal preparation	12	5.83	0.9575	0.8857-0.9951
Completed exams	36	17.48	0.8024	0.6561-0.9320
Blood reservation	08	4.28	0.8352	0.9047-0.9843
ICU reservation	04	2.29	1	0.9616-1.0000
General patient guidelines	07	3.40	1	0.9331-1.0000
Consent form	07	3.40	1	0.9311-1.0000
Preanesthetic visit	109	53.43	0.9693	0.4996-0.9846
Skin integrity	25	12.14	0.7948	0.7398-0.9466
Identification of the surgical site	95	49.22	0.9703	0.5161-0.9856
Total	203	100	-	-

*p-value <0.001

For the analysis of the reliability/agreement of data on the preoperative visit checklist, ignored or blank data were excluded according to each variable. Considering Kappa values, 81.8% of the variables studied had data reliability considered almost perfect, and 18.2% of the variables obtained excellent data agreement (Table 1). Agreement was statistically significant for all variables ($p<0.001$).

Discussion

Several parameters can be used to evaluate data from a given record. The parameters incompleteness and reliability of the recorded data were used in this research to analyze the filling and agreement of information.

The World Health Organization defines adverse effects as any result that is different and unexpected in the health status of a patient. This implies thinking that a contradictory/mistaken answer and a wrong or even uninformed identification can cause irreversible damage. This reflection should support the nurses' work in conducting the preoperative visit, since data collection will subsidize all subsequent assistance.[11]

Ignored or unfilled variables can result in a series of isolated and/or concomitant deficiencies. Unfilled variables can be attributed to little attention, carelessness, or ignorance of the professional nurse who conducts the preoperative visit, which can compromise comprehensive care for the surgical patient.[12]

Low reliability of information in any record is due to poor quality of data, either due to the high degree of omission in filling the fields or due to data inconsistency.[13] The preoperative visit is a resource used to collect data about the surgical patient, through which problems or changes related to the patient's biopsychosociospiritual aspects can be detected, enabling to plan the nursing care to be provided in the perioperative period. Thus, analyzing the quality of data on the PNV checklist is also essential to monitor the nurse's work and measure the potential of nursing care provided in surgeries.[1]

In this research, it was found that the quality of data on the preoperative checklist is satisfactory, since the incompleteness of most of the variables analyzed is very low/low and the agreement analysis showed that information is robust and reliable.

Patient's weight and height were variables classified as high incompleteness, which reveals filling failure and compromised care. It is noteworthy that almost half of the adverse

events in hospitalized patients were preventable, most of them related to surgery, use of medications, and anthropometric data. The filling of these two variables in the perioperative form enhances and ensures nursing care, as they are associated with patient safety when administering medications, mainly anesthetic drugs.[14]

Due to its very high incompleteness, the preanesthetic visit was another variable that deserves to be highlighted. This result can be justified by the fact that the anesthesiology clinic that provides specific preanesthetic consultations was under implementation during the data collection period. Notwithstanding, the findings are worrisome because it is a surgical center with elective surgeries, whose management of the services of the surgery unit deserves attention.

The preanesthetic visit allows the identification of unfavorable clinical conditions for the anesthetic-surgical procedure, and is legislated by the Brazilian Federal Council of Medicine as indispensable for surgery. It is also recommended by the Brazilian Society of Anesthesiology, and must be performed prior to anesthesia for all elective procedures. Preanesthetic assessment also reduces mortality, ensures a safe anesthetic-surgical procedure, and reduces surgery cancellations and the length of hospital stay, allowing the patient to return to his/her functions as soon as possible.[15]

Wrong-site surgery was identified by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) as the second most frequent adverse event in surgical patients between 1995 and 2005.[16] In 2003, JCAHO published the "Universal protocol for preventing wrong site, wrong procedure, wrong person surgery", classifying wrong-site surgery as a sentinel event, as these are events that can never occur, being preventable in 100% of the cases. Even so, from 2000 to 2005 there were 3,044 sentinel events, 80% of which were wrong-site surgeries.[17- 18]

In this study, the surgery site was not identified (nonfilling) in 49.2% of the cases, which draws attention to more effective nursing practices and requires the surgical team to define the

surgery site to guarantee patient safety. Establishment of laterality is an international practice for surgeries and invasive procedures. It must be done before the patient is referred to the operating room, during the preoperative visit and, preferably, by the surgeon, to prevent any error.[19]

In 2008, the WHO Global Alliance for Patient Safety proposed the second Global Challenge, entitled "Safe Surgery Saves Lives". Studies assess that the implementation of the safe surgery (time out) protocol has an impact on improving care for surgical patients, preventing adverse events, and improving team communication.[18-19]

When talking about actions aimed at promoting patient safety, it is interesting to understand that perioperative nursing plays an important and complex role. The Surgical Safety Checklist (SSC) is a tool incorporated into the routine of surgical centers that aims to minimize healthcare risks, improve surgical safety, and reduce avoidable complications. Regarding the applicability of both the SSC and the protocol for safe surgery, the nursing team needs to develop critical and reflective thinking and to know why they are applying such a tool, thus being able to prove and defend the importance of these tools.[20]

In a study conducted on the process of implementing SSC in hospitals in England, factors such as teaching this list, practical training on how to use and fill it, as well as dealing with resistant team members were considered facilitators for its successful implementation.[21] Research points out that items interpreted as more relevant or at higher risk to the patient tend to have better adherence by the professional responsible for its verification. Furthermore, lack of training of the team to reflect on potential errors is one of the greatest barriers to a successful patient assessment. Periodic assessment of professional adherence is thus recommended.[22]

Studies generally indicate a significant reduction in the levels of anxiety and stress in the perioperative process when all patients receive the PNV properly.[2] The nurse plays an important role in encouraging the surgical patient and allows him/her to verbalize his/her doubts and

yearnings. In this sense, PNV creates a space for listening and exchanging information that contribute to a better adaptation to the hospital environment, in addition to providing a smooth surgery that can contribute to reduce complications throughout the period of hospitalization.[23]

Conclusion

This study pointed out that the data on the preoperative visit checklist are of good quality, since the parameters incompleteness of data filling and data reliability achieved positive results. However, continuous service training and efforts of the management team of the surgical center are necessary, focusing on variables that had high/very high incompleteness, which may compromise the quality of care.

It is important to note that the preoperative nursing visit is an activity that is inserted in the perioperative period, and failure to perform it rigorously weakens the process and directly impacts the patient experience.

Patients were sometimes referred to the surgical center with an unfilled preoperative visit checklist, which made data collection unfeasible, thus constituting the research limitation. This implies alerting the nursing team to good practices in safe and effective perioperative conduction, avoiding nursing care failures and patient safety compromise.

This research is expected to bring about the formulation of health education strategies that aim to improve the healthcare service provided to the surgical patient. In addition, it intends to raise awareness in nurses who conduct the preoperative visit to understand the importance of this activity, aiming at an effective care that positively impacts their service.

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