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DEVELOPMENT OF PERIOPERATIVE CARE INSTRUMENTS BASED ON SDKI SLKI SIKI IN OPERATING ROOM

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ABSTRACT

Standard nursing language is now a global trend in the nursing profession with the aim of uniting the terminology used in nursing practice. This study aimed to compile the development an Indonesian Standard of Nursing diagnostic, outcomes and intervention-based perioperative nursing care instrument. Research and Development study of 106 medical records with sample size 21 participants for FGD and 33 respondents in model trial were selected using purposive sampling. The variable in this study was the development of perioperative nursing care instruments and collected using observation sheet and questionnaire, data analysis used descriptive approach. Preoperative nursing care instruments developed were: anxiety, acute pain, risk of infection, knowledge deficit, and risk of perioperative hypothermia. Intraoperative nursing care instruments developed were: ineffective airway clearance, risk of perioperative hypothermia, risk of aspiration, risk of bleeding, anxiety, risk of infection, acute pain, risk of fluid imbalance, and risk of falls. The postoperative nursing care instruments developed were: ineffective airway clearance, risk of infection, acute pain, risk of falls, risk of perioperative hypothermia, and risk of aspiration. Preoperative nursing care instruments developed were 10 instruments consisting of preoperative, intraoperative, and postoperative. The trial results of the instrument showed good results and positive opinions expressed by nurses at the hospital.

Keywords: Perioperative, diagnosis, outcomes and nursing care.

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INTRODUCTION

Perioperative nursing care is a service that takes place before, during, and immediately after the surgical procedure (1). The perioperative nursing care instruments still use different standards so that there are differences in the diagnosis, outcomes, interventions and terminology used. Various nursing literature has not explained much about nursing care standards (2). This can cause differences in the provision of nursing care which can affect the quality of nursing care (3). Standards of diagnosis, outcomes and interventions have been established by PPNI as a nurse organization in Indonesia for standardization of nursing care (4). However, the application of nursing care according to the Indonesian standards of the diagnostic (SDKI), outcomes (SLKI) and intervention (SIKI) is still not widely done in various hospitals, so that it can affect the quality of nursing documentation.

Perioperative nursing care is often done in the case of fracture. The number of injuries that could result in a fracture shows a fairly increased prevalence from 2013 by 8.2%, up to 9.2% in 2018. The proportion of limbs that often suffer injuries is the lower limb by 67.9% and the upper limb by 32.7% (5). The higher the incidence of fractures, the higher the required standard of perioperative nursing care in providing care. The use of nursing care standards can improve the completeness of nursing documentation.

Some factors that cause the quality of nursing documentation include documentation according to the nursing process, use of terminology and documentation instruments according to standards, electronic documentation and documentation instruments that vary according to nursing practice (De Groot et al., 2019). Instrument documentation according to standards is one of the factors that influence the quality and integration of nursing documentation. Research conducted by Linden, Karen and Jo-ann (2017) explains that the use of standardization in the provision of nursing care is important in the successful integration of nursing documentation (Johnson, Edward and Giandinoto, 2018). Nursing documentation instruments must also be prepared based on established clinical practice standards (Usselmann et al., 2015; Yontz et al., 2015 ;). The use of documentation instruments that are not in accordance with the standards can cause discrepancies in the nursing care provided so that it can affect the quality of documentation. The use of documentation instrumentation can also cause incompleteness in documentation caused by differences in terminology, different understandings, and differences in the enforcement of nursing diagnoses. This study was aimed to develop a perioperative nursing care instrument based on SDKI, SLKI, SIKI in fracture cases so that it is expected to improve the quality of nursing documentation.

METHODS

The study used a Research and Development research design with samples in this study totaling 106 medical records including upper limb fractures in 54 cases (50.94%), lower limb fractures in 34 cases (32.08%) and clavicle fractures in 18 cases (16.98%). The results of the evaluation of medical records were then carried out with focus group discussions with 21 participants and the instrument was tested for reliability validity with 33 operating room nurses. The variable in this study was the instrument of perioperative nursing care based on SDKI-SLKI-SIKI in the operating room. The instrument used in the study was the medical record observation sheet and questionnaire sheet. Data analysis with descriptive analysis, validity test was done by assessing the I-CVI (Individual Content Validity Index) score. The result of the I-CVI value is 1.00, meaning that the instrument is said to be valid (Yusoff, 2019). The reliability test of the perioperative nursing care instrument was based on the results of a trial of the development of a new instrument to 10 respondents. The reliability test used the KR 20 test (Kuder Richardson). Ethics approval was obtained from the ethics committee team at Airlangga University Hospital with No: 185 / KEH / 2019

RESULTS

Evaluation of Perioperative Nursing Care Instruments

Perioperative nursing care instruments at Airlangga University Hospital had five (5) instruments consisting of anxiety, risk of infection, acute pain, risk of lack of fluid volume and risk of injury to the perioperative position not based on SDKI-SLKI-SIKI. The evaluation of perioperative nursing care instruments used medical record of fracture surgery. Table 1 shows that the recapitulation of medical records in fracture patients for seven (7) months from May to November 2019 was 106 medical records. Medical records of patients with close fractures are 96 medical records and open fractures are 10 medical records (Table 1). Table 2 shows that the diagnosis most often made in perioperative patients was anxiety (49/106, 46.23%) and what was rarely established was the risk of lack of fluid volume (29/106, 2.83%) and the risk of injury to the operative position (3/106, 2.83%). The diagnosis that has been established and complies with SDKI was the risk of infection (29/106, 27.36%) and acute pain (22/106, 20.75%). Based on Table 3, nursing outcomes in accordance with SLKI were infection rates (29/106, 27.36%), pain levels (22/106, 20.75%), and fluid balance (2.83%). Table 4 shows that nursing interventions established and in accordance with SIKI were pain management and analgesic administration by 20.75%.

Development of perioperative nursing care instruments based on SDKI-SLKI-SIKI effectiveness

The success of the implementation of the new instrument socialization was seen based on the evaluation of nurses' abilities and opinions in the application of the SDKI-SLKI-SIKI-based perioperative nursing care instrument as measured using nurse observation sheets and nurse opinion questionnaires. Participants consisted of nurses at the Central Surgical Installation at Unair Hospital as many as 33 participants. The results of evaluating the ability of nurses in the application of the SDKI-SLKI-SIKI-based perioperative nursing care instrument are attached with the following table explanation (Table 6). The nurses' ability to determine the nursing diagnosis is mostly in the good category (81.8%). The ability to fill the outcomes is mostly in the good category (84.8%). All nurses are able to fill in the intervention, implementation and evaluation of perioperative nursing care based on SDKI-SLKI-SIKI (Table 7).

Table 1. The Recapitulation of Medical Records in Operating Room May to November 2019

Medical diagnostic	Month							Total
	May	June	July	August	Sept	Oct	Nov	
Close Fracture	13	14	24	14	9	10	12	96
Open Fracture	1	3	1	1	2	1	1	10
Total	14	17	25	15	11	11	13	106

Table 2. Nursing Diagnostics Evaluation Based on Medical Record in Operating Room May to November 2019

Nursing Diagnostic	SDKI Standard	%
Anxiety	Anxiety	49 (46.2)
Risk of Infection	Risk of Infection	29 (27.36)
Acute Pain	Acute Pain	22 (20.75)
Risk of Deficit Volume	Risk of Inbalance Fluid Volume	3 (2.83)
Risk of Injury	Risk of Fall	3 (2.83)

Table 3. Nursing Outcomes Based on Medical Record in Operating Room May to November 2019

Nursing Outcomes	SLKI Standard	%
a. Anxiety Level b. Self-control of anxiety	a. Anxiety level b. Agitation level	49 (46.23%)
Infection level	a. Infection level b. Skin and tissue integrity c. Control of risk	29 (27.36%)
a. Pain level b. Pain control	a. Pain level b. Physical mobility	22 (20.75%)
a. Fluid balance b. Hydration status	a. Fluid balance b. Hydration status	3 (2.83%)
a. Physical injury level b. Tissue integrity: Skin and mucosa membrane	a. Fall level b. Injury level	3 (2.83%)

Table 4. Nursing Intervention Based on Medical Record in Operating Room May to November 2019

Nursing Intervention	SIKI Standard	%
a. Anxiety reduction b. Distraction technique c. Relaxation therapy	a. Anxiety reduction b. Surgery preparation c. Calming technique d. Relaxation technique	49 (46.23%)
a. Infection control during procedure b. Incision/puncture caring	a. Infection prevention b. Wound care after incision	29 (27.36%)
a. Pain treatment b. Analgesic procedure c. Analgesic control	a. Pain management b. Giving Analgesic	22 (20.75%)
a. Monitoring vital sign b. Fluid and electrolyte management c. Intravena therapy d. Bleeding reduction	a. Fluid evaluation b. Urine catheter	3 (2.83%)
a. Position control b. Skin surveillance c. Surgical precaution d. Temperature control: perioperative	a. Fall prevention b. Environment safety management c. Management of sedation	3 (2.83%)

Development of perioperative nursing care instruments based on SDKI-SLKI-SIKI effectiveness

Table 5. Development of perioperative nursing care instruments based on SDKI-SLKI-SIKI

Item Instrument	Instrument perioperative nursing process	Standard nursing process based on SDKI, SLKI, SIKI	Instrument development
Title	General nursing care titles have not been differentiated between pre, intra and postoperative	-	Instrument titles are distinguished between pre, intra and post instruments
Diagnosis	Writing a diagnosis is written with a diagnosis pattern, characteristic limitations and related factors. There is an assessment date, time and PPJA signature	Nursing diagnosis refers to the IDHS. Writing a diagnosis meets the elements of PES (problem, etiology, symptom) for actual diagnosis, PR (problem, risk factor) for risk diagnosis, PS (problem, symptom) for diagnosis of health promotion and related clinical conditions	Nursing diagnoses compiled have columns of causes, major signs and symptoms, minor signs and symptoms and associated clinical conditions. Charging using checklist.
Outcome	Nursing outcomes have a target time for intervention. There are preliminary outcome criteria and target results to be achieved as well as outcome criteria indicators	Outcome refers to SLKI. There is a label containing the target time for the intervention. There are expectations of interventions carried out and there are indicators of expected outcomes and desired targets. There is a value indicator for the outcome criteria after the intervention has been carried out	On output, there is a target time for how long and how many times the action was taken. There are expectations that are expected, there are output labels and expected outcomes to be achieved in accordance with the IDHS and refer to PAK. Charging using checklist.
Intervention	Nursing intervention refers to the NIC. There is the title of intervention and action taken	Nursing orders refer to SIKI. There are labels of interventions carried out and actions which include observation, therapeutic, collaboration, education	Nursing interventions. There are labels / titles of actions and interventions carried out referring to SIKI including observational, therapeutic, educational and collaborative actions. Charging

Item Instrument	Instrument perioperative nursing process	Standard nursing process based on SDKI, SLKI, SIKI	Instrument development using checklist
Implementation	Implementation refers to interventions that have been prepared based on the NIC. There is a time for the intervention to be used and the initials to carry out it	Implementation refers to interventions that have been prepared based on SIKI.	Implementation refers to interventions that have been prepared based on SIKI and PAK.
Evaluation	Evaluation of nursing care based on NANDA, NOC, NIC. There is an evaluation of implementation time with outcomes / outcomes according to NOC. Results of the review and subsequent planning. There is an assessment date, time and PPJA signature.	Evaluation of nursing care based on SDKI, SLKI, SIKI.	Evaluation of nursing care based on SDKI, SLKI, SIKI. There is an evaluation of the implementation time with the results criteria according to SLKI. There is a review and further planning. Charging is done by using checklist.

Table 6. Evaluation of Nurses' Capabilities about the Implementation of the Perioperative Nursing Care Instrument based on SDKI-SLKI-SIKI

Nursing Process	Category		
	Good	Medium	Les
Nursing Diagnosis	27 (81.8%)	6 (18.2%)	0 (0%)
Nursing Outcomes	28 (84.8%)	5 (15.2%)	0 (0%)
Nursing Intervention	33 (100%)	0 (0%)	0 (0%)
Nursing Implementation	s33 (100%)	0 (0%)	0 (0%)
Nursing Evaluation	33 (100%)	0 (0%)	0 (0%)

Table 7. Evaluation of Nurses' Opinions about the Application of the Perioperative Nursing Care Instrument based on SDKI-SLKI-SIKI

Aspects	Category		
	Good	Medium	Less
Functionality	31 (93.9%)	2 (6.1%)	0 (0%)
Efficiency	31 (93.9%)	2 (6.1%)	0 (0%)
Usability	30 (90.9%)	3 (9.1%)	0 (0%)

DISCUSSION

The development of the SDKI-SLKI-SIKI based perioperative nursing care instrument was developed through a Focus Group Discussion (FGD) and expert consultation. The development of the instrument is based on care standards that have been determined by PPNI professional organizations and in accordance with the established Nursing Care Guidelines (PAK). According to the Hospital Accreditation Committee (KARS) in 2017, Professional Care Providers (PPA) work as an interdisciplinary team with interprofessional collaboration, including using the Nursing Care Guide. The operating room of the Teaching Hospital in East Java currently has four PAKs, including fracture, HIL, Appendicitis and CKD but does not yet have a nursing care instrument based on SDKI-SLKI-SIKI. The instruments developed there are 10 instruments based on nursing problems that exist in fracture PAK. Five instrument titles based on old instruments adjusted for IDHS and PAK fracture include acute pain (D.0077), anxiety (D.0080), risk of falling (D.0143), risk of infection (D.0142), risk of fluid imbalance (D.0036). The next five instruments are taken from nursing problems in PAK fractures including ineffective airway clearance (D.0001)), knowledge deficit (D.0111), aspiration risk (D.0006)), risk of bleeding (D.0012), and risk of perioperative hypothermia (D.0141).

The Indonesian Nursing Diagnosis Standard (IDHS) is a diagnostic standard used as a benchmark in establishing nursing diagnoses in Indonesia in providing safe, effective and ethical nursing care (8). This diagnosis standard comprises 149 nursing diagnoses compiled using various reference sources such as textbooks, nursing diagnosis standards from other countries / institutions and scientific journals, and has been reviewed by practitioners and nursing academics. The use of standard diagnoses has good benefits for patient care. Positive perceptions about using nursing diagnoses have good benefits for identifying patient problems, planning and improving the quality of patient care (9). The application of care standards in providing perioperative nursing care is needed so that nursing care can be uniform, accurate, and unambiguous to guarantee continuity and quality of service (10).

Indonesian Nursing Output Standards (SLKI) are benchmarks used as guidelines in determining safe, effective and ethical nursing outcomes (11). This instrument was made to contain results and nursing indicators that proved sensitive to seeing changes in symptoms during treatment, suitable for evaluating the expected results for patients (12). Nursing outcomes are divided into two types, namely negative outcomes and positive outcomes. Negative outcomes indicate conditions, behaviors, or unhealthy perceptions / behaviors so the determination of nursing outcomes aims to decrease. Positive outcomes indicate healthy conditions, behaviors or perceptions so that nursing outcomes aim to improve or improve (11).

The Indonesian Nursing Intervention Standard (SIKI) is a benchmark used as a guide in the preparation of safe, effective and ethical nursing interventions (4). The nursing intervention component consists of three components, namely: label, definition and action. Actions on nursing intervention consist of observation, therapeutic, education and collaboration. Intervention planning process involving patients and families. The involvement and empowerment of patients and families in joint care with Professional Care Providers (PPA) must ensure that care plans are provided to each patient (13).

This instrument was developed with due regard to the performance of users in the operating room of the Teaching Hospital in East Java. The instruments are arranged in a simple, clear manner and use diagnostic standards, outcomes and interventions according to the standards set by PPNI, namely SDKI, SLKI and SIKI. Nursing care instruments are used as a form of nursing documentation by the nurse in charge of care (PPJA). Nursing documentation is the main clinical information source for meeting legal and professional requirements (14). Operating room nurses perform perioperative nursing care starting from diagnosis, setting outcomes, interventions, implementation and evaluation by using the development of this instrument so that there will be similarities and continuity of services in conducting nursing care. This nursing care instrument is used as a reference and documentation in providing care to patients. Standard care provision provides important benefits to the integration of nursing documentation (2). The nursing care instrument is expected to increase integration in providing care services to patients. The use of nursing care instruments according to professional standards is also expected to improve the completeness and quality of documentation (3).

Limitations in this study were the filling of this instrument, especially the value on the outcome depends on the clinical judgment of each nurse who fills it in so that there can be differences between nurses; the instruments developed were limited to 10 instruments and instruments need to be developed for other cases.

CONCLUSION

The preoperative nursing care instrument developed was an instrument for nursing diagnoses of anxiety, acute pain, risk of infection, knowledge deficit and risk of perioperative hypothermia. Intraoperative nursing care instruments developed were ineffective airway clearance, risk of perioperative hypothermia, risk of aspiration, risk of bleeding, anxiety, risk of infection, acute pain, risk of fluid imbalance, and risk of falls. The postoperative nursing care instruments developed were ineffective airway clearance, risk of infection, acute pain, risk of falls, risk of perioperative hypothermia, and risk of aspiration. The development of perioperative nursing care instruments has met the requirements of good instruments, namely valid and reliable.

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