Original Article

Nursing System Development in Patients Undergoing Operation in 3C Surgical Ward

Darawan Augsornwan MPH[1], Artitaya Sabangbal BNS[1], Maneewan Srijan BNS[1],
Kanokarn Kongpitee MNS[1], Lalida Petphai BNS[1], Palakorn Surakunprapha MD[2]

[1] Division of Nursing, Department of Surgical and Orthopedic, Srinagarind Hospital, Faculty of Medicine,
Khon Kaen University, Khon Kaen, Thailand
[2] Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Objective: The purpose of the present study was to develop nursing system for inpatients of Surgical Department Ward.

Materials and Methods: The sample population was 11 nurses and 200 patients. The present study was divided into 3 phases: Phase 1. Situation review about the clinical outcomes, process of care from documents such as nurses note and interviewing the nurses, patients and families about process of care. Phase 2: focus group with 11 nurses, searching guideline for specific cares, nursing care system then establish protocol. Phase 3 implementation and evaluation.

Results: patients/family receive appropriate information about breathing exercise, cough, early ambulation after operation and information during stay in hospital. Patients and families satisfaction were 95.04 percent. Nurses satisfaction were 95 percent, no complications.

Conclusion: The nursing system is the dynamic process and using evidence base to develop nursing care. The appropriate system depends on context and needs of personnel to keep continuous progression and development.

Keywords: Development, Nursing system, Inpatient Surgical Department Ward

This study was a study in the context of Srinagarind Hospital, ward 3C which was inpatients Surgical Department ward, having a total of 29 beds for admitted patients with congenital anomalies such as cleft lip and cleft palate, hypospadis and congenital megacolon as well as patients with head and neck cancer, urology who need surgery. Forty percent of patients were adult, forty percent were children and twenty percent were elderly[1], Nursing cares includes taking care of patients during pre-post operation until discharge. 3C Ward has 13 register nurses, 9 practical nurses. The proportion of staff to patients ratio is 1: 5 the average pre-post operation patients is 6 cases a day[2]. Undergoing surgery is a difficult time for patients and families. When patients were admitted in hospital they need their family to stay with them, need more encouragement from their family, need lots of information about disease, operation process and etc. They feel overwhelmed with fear and anxiety[3]. Nurses work closely with patients and family for 24 hours in the process of patients care, should have good nursing ability to take adequate care for the patients, innovation and an efficient nursing care system to promote patients self care ability, reducing suffering, preventing complications and must have competency in information giving[4]. From previous nursing outcomes we found patients needs more appropriate information about wound care, early ambulation after operation and follow-up.

Nursing care system is the system where nurses use their ability to adjust the balance between self care ability and self care demand by searching the

Correspondence to:
Surakunprapha P, Division of Plastic Surgery, Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.
Phone: +66-81-5441610, **Fax:** +66-43-022558
E-mail: palsur@kku.ac.th

problem or needs then developing patients ability for self care. Nursing care system is a dynamic system depending on patients needs[6]. To develop nursing system needs integrated quality management and risk management together. Nursing care comprises[7]:

1) Outcome-based nursing service. This is the specific nursing care to each health problem.

2) Holistic care: integrated physical, mental, emotional, social and spiritual care together. All of nursing activity focused on the science of caring.

3) Family-based nursing practice: is focusing on family centre to solve health problem.

4) Management view: This is the management system for nursing quality. Use nursing process, nursing conference, nursing rounds, nursing modalities, and nursing documentation.

Nursing care systems have to integrate 4 dimensions of service thus treatment, health promotion, prevention of illness and rehabilitation as well as concern about holistic care[6]. Nurses provide nursing care to all people to solve health problems, so need to have knowledge, ability to prevent illness, duplicate rehabilitation and promote quality of life. Nurses use Care MAPs and nursing care plan to guide nursing implementation in response to patients need[8].

Nurses role

There are many words to explain nurses role. The roles and function of nurse comprises[9].

1) Caregiver: to help patients physically and psychologically when they needed.

2) Communicator: communicate with the patients/family, health professionals, by verbal or written. The quality of a nurse's communication is an important factor in nursing care.

3) Teacher: teach patients about their health and health care procedures. Assesses the patients learning needs, sets specific learning goals with the patients and measures learning.

4) Patients advocate: to protect the patients, to represent the patients and patients rights.

5) Counselor: counseling for helping patients and coping with the problems. It involves providing emotional, intellectual, and psychological support.

6) Leader: nurse is the leader who influences others to meet a specific goal. Its leading individual patients, family, groups, colleagues, or the community. So nurse need to learn, understand process and have the skill to motivate others.

7) Manager: the nurse manages the nursing care of individuals, families, and communities. Also work with the multidisciplinary health care team to measure the effectiveness of management plan and to monitor outcomes.

8) Researcher: use research and evidence for nursing care to improve patients care.

Nurses carry out assessment of the patient's health status and the patient's self care. In the hospital nurses provide direct nursing care, are responsible for implementing the prescription, assessing the patients's responses to the treatment plan and also evaluating the safety of medication before implementation. Nurses interpret patient information and assess data to make decisions about what actions are needed. Nurse focuses on helping patients meet their needs, including physical, emotional, cognitive, social, and spiritual needs. Also working with multidisciplinary team use evidenced-based to develop and implement the best care for the patient. Nurses are patient advocates and facilitate optimal health, functioning, and wellness in the care of individuals, families, communities and populations. Another important component of nursing care is patient education. Nurses assist patients in learning how to manage their own health, coping with their health problems, understanding warning signs and symptoms of emerging problems[10].

Purpose

To develop nursing system for inpatient surgical department ward.

Materials and Methods

This study is a participation action research. The sample population were 11 nurses and 200 patients and families. The study were divided into 3 phases.

Phase 1: situation review

In this phase we review the clinical outcomes, process of care from documents such as nurses note of nursing care in the past year and interview nurses, 60 patients and families about process of care by nurses such as receiving–giving information, pain management. The authors also reviewed ward key performance index such as staff hand washing, productivity, nurse or staff activity, number of patients and procedure each day. This phase takes about 2 months.

Phase 2: focus group

focus group with 11 nurses, we focus on the problem and solution for top 5 diseases in ward, process staffs when new patients arrive what we do who get

involved in that activities and how long it take for each activity. Created form to record new patients admitted, information, prepare patients for operation and nursing care after operation. This phase we consider the key performance index such as pain management, low rate of reassessment pain (46%), not appropriate information giving for the new patients, staff's hand washing (60%), staff not follow all practice guideline, job description for each staff level is not suitable for each situation. Then searching guideline for specific care, nursing care system then establish protocol. This phase we have a protocol for giving information, teaching protocol and teaching record, leaflet for all top five diseases, create video media to convey information for new patients and video media for patients who will go for surgery, ambulation package and protocol for patients with head and neck cancer, patients zoning, primary nurse, improved job description for each staff level, program to record number of patients, kind of medical procedures for showing nurses activity each day, also changed working time for 1 nurse from 8.00 to 16.00 hours to 14.00 to 22.00 hours on Tuesday to Thursday, adding practical nurses to standby shift on Tuesday to Thursday. audit nursing practice every week, provide feedback every month by ward committee and choose star reward every month from their performance. Create patients zoning for elderly, children, observing zone, infectious zone. Develop primary nurse assignment. Improved job description for each staff level. Create a program to record number of patients, kind of medical procedures for showing nurses activity each day. This phase take for 5 months.

Phase 3 Implementation and evaluation

After we have contents from phase 2 we implement and evaluate by using structure questionnaire for 140 patients/parents focused on 6 domains: 1) caring, 2) ability and expertise in nursing, 3) management of physical environment, 4) availability of nursing service, 5) continuity of care, and 6) effectiveness or outcome of care. The data were analyzed in to 3 level of expectation. 1) more than expectation level, 2) Expectation level, and 3) less than expectation level and presented in frequency and percentage. This phase take 6 months.

Ethical consideration

This study was approved by the Ethic Committees on Human Rights Related of Khon Kaen University (HE571347).

Results
1) Baseline characteristics of sample population
Characteristics of the nurses:

The sample population were 11 register nurses all are female, age from 23 to 49 years old average age is 33 years old, 90.9 percent graduated bachelor's degree.

Characteristics of the patients and operative data

The sample population were female 53.3 percent, age 20 to 91 years old, average age is 37.6 years. 59.2 percent married, 39.1 and 38.1 percent graduated primary and secondary school. 73.2 percent have experience in hospital. There are parents of patients with craniofacial anomalies 28.3 percent. Patients with cancer (except head and neck cancer urology cancer) 12.5 percent. Patients with Stone in urinary tract 8.2 percent. Patients with Head and neck cancer 7.6 percent. Patients with cancer in urology, hypospadias, anorectal malformation, hirschsprung disease, short bowel and miscellaneous were 3.3, 3.3, 3.3 and 26.6 percent. For all of this patients divided to 5 groups by primary doctor were plastic, urology, pediatric, trauma and miscellaneous 46.7, 19.6, 19.6, 7.1 and 7.1 percent. Length of hospital stay were 3 to 70 days average 6.5 days. Length of hospital stay is 3 to 70 days average 6.5 days 73.2 percent have experience in hospital , the details are shown in Table 1.

Table 1. Baseline characteristics of the patients

Characteristics	Number (%)
Diagnosis	
Craniofacial anomalies	40 (28.6)
Cancer (except head and neck and urology cancer)	18 (12.8)
Urology	23 (16.4)
Stone in urinary tract	16 (11.4)
Cancer in urology	7 (5.0)
Head and neck cancer	11 (7.8)
Hypospadias	6 (4.3)
Anorectal malformation, hirschsprung disease, short bowel	6 (4.3)
Miscellaneous	37 (26.4)
Primary doctor	
Plastic	66 (41.1)
Urology	27 (19.3)
Pediatric	27 (19.3)
Trauma	10 (7.1)
Miscellaneous	10 (7.1)

2) Information giving
Convey information to new patients

100 percent of patients/family receive appropriate information about information during stay in hospital, 96.87% know and understand the information. From observation 94.4% patients/family follow the hospital rules and protocol.94.74% of patients/family are satisfied about video media.

Pre-post operative care

Patients satisfaction about video media is 85.83 percent. 95% patients have knowledge about deep breathing exercise, how to cough, position how to get up from bed, early ambulation and can practice. 100% of patients can breathing exercise correctly, 92% cough correctly.

Early ambulation

85% can follow early ambulation protocol within 2 days, 100% can follow protocol within 3 days, complications can be prevented.

3) Follow the practice guideline
Hand washing in 5 moment

Staff hand washing was 86.44 percent.

Pain management

Pain assessment was 100 percent, pain re-assessment was 95 percent.

4) Patients opinion

Patients opinion for quality of nursing show as Table 2.

Patients/Family with craniofacial anomalies opinion for quality of nursing show as Table 3

5) Staff opinion

Appropriate job description for practical nurse, nurse aid and worker. Patients/ family satisfaction is 95.04 percent. Nurses satisfaction is 95 percent.

This is some of the staffs opinions the assignment is clear and delegation.

"I have more time to do nursing care and to talk to patients".

"I am more happy, patients can do early ambulation and no complication".

"I think this is a very good way we can reach nursing standard now".

Discussion

The sample population were patients/family who graduated high school and of working age who can understand information or can co-operate easily also the information giving system for them is quite systemic and nurses are experienced with giving information and caring so the percentage outcome of care is better than other domain, but if compared with all patients the patients/ family with cleft lip and palate percentage of less than expectation in 5 domain is more

Table 2. Patients opinion for quality of nursing

Items	More than expectation	Expectation	Less than expectation
1) Caring	94.50	5.10	0.40
2) Ability and expertise in nursing	92.56	5.71	1.73
3) Management of physical environment	94.49	4.86	0.65
4) Availability of nursing service	93.61	5.66	0.73
5) Continuity of care	93.77	5.31	1.10
6) Effectiveness or outcome of care	96.28	3.57	0.15

Table 3. Patients/Family with craniofacial anomalies opinion for quality of nursing

Items	More than expectation	Expectation	Less than expectation
1) Caring	35.6	56.4	7.9
2) Ability and expertise in nursing	32.4	59.0	8.15
3) Management of physical environment	34.0	61.2	6.3
4) Availability of nursing service	38.4	53.4	7.9
5) Continuity of care	34.0	60.1	5.78
6) Effectiveness or outcome of care	43.1	54.3	2.5

because the patients with cleft lip and palate stay in hospital about 3 days. It is not enough time to build relationship between nurse and patients, when nurses approached the patient they usually cry so nurses delivered nursing care through mothers and after operation patients/family feel overwhelmed so can make percentage of 5 domain less than adult patients. From this study nurses should find the model to approach the patients with cleft lip and palate.

Conclusion

Nursing system is the dynamic process using evidence to develop nursing care. After develop the system parents/patients perception of quality nursing care in 6 domains is almost in expectation level, but some topics in each domain patients perception is lower level their expectation, so it needs further consideration in details and develop the nursing system more to improve the quality of care. The appropriate system depends on context and needs to keep an eye on every event. The importance is how to maintain the good result forever (sustainable).

What is already known on this topic?

The development process need staffs co-operate.

What this study adds?

Process of development need time. The guide line or protocol can change if there are new evidence and nursing care is dynamic so we need to carry on the context and evidence.

Potential conflicts of interest

The authors no declare conflicts of interest.

References

1. Medical record. Khon Kaen, Thailand: Srinagarind Hospital Khon Kaen University; 2015.
2. Medical record. Khon Kaen, Thailand: 3C ward, Srinagarind Hospital Khon Kaen University; 2015.
3. Augsornwan D. Nurses' role in taking care for children with cleft lip and cleft palate. Journal of Faculty of Nursing, KKU 2004;27:1-6.
4. Augsornwan D, Namedang S, Pongpagatip S. Information needs of parents of children with craniofacial anomalies undergoing operation. Journal of Nurses' Association of Thailand, North-Eastern Division 2005;23:46-54.
5. Young JL, O'Riordan M, Goldstein JA, Robin NH. What information do parents of newborns with cleft lip, palate, or both want to know? Cleft Palate Craniofac J 2001;38:55-8.
6. Hanuchareonkul S. Nursing: science of caring. Bangkok: V. J. Printing; 2001.
7. Althammer T. Designing process-driven information systems in nursing care. Norderstedt, Germany: GRIN Verlag; 2007.
8. Pichitpornchai W, Asdornwised U. Nursing case management:strategies and application. Bangkok: Niyomwittaya Printing; 2001.
9. RNpedia. Roles and function of a nurse [Internet]. 2017 [cited 2017 Oct 8]. Available from: https://www.rnpedia.com/nursing-notes/fundamentals-in-nursing-notes/roles-function-nurse.
10. UT InterProfessional Education, The University of Texas at Austin. Nursing [Internet]. 2017 [cited 2017 Oct 9]. Available from: http://www.healthipe.org/healthcare-roles/nursing.