SYSTEMATIC REVIEW

The Effect Standardized Nursing Terminology Education Program on Quality of Nursing Documentation: A Systematic Review

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ABSTRACT

Introduction: Factors that affect the quality of nursing documentation include the use of terminology and documentation instruments according to standards. Educational programs are needed to improve the ability of nurses in the use of standard nursing terminology. This review study aims to explore the effect of a standardized nursing terminology education program on the quality of nursing. **Methods:** A systematic review of search results from six electronic databases (Scopus, ProQuest, Web of Science, Science Direct, PubMed and Research Gate). The criteria for the papers in this study are articles published in 2017 – 2022, full texts, articles using English or Indonesian, and research methods using cohort study, quasi-experimental, or randomized control trial. The keyword used are ("Standardized Nursing Terminology" OR "Standardized Nursing Language" OR "NANDA") AND ("education" OR "educational program" OR "training"). The review used the Joanna Briggs Institute Guidelines for quality reviews and the Prisma checklist for this review guide. **Results:** We found ten studies that met the inclusion criteria in the review. The included study contains the effect of a standardized nursing terminology education program on the quality of nursing documentation. All participants in this study were nurses who worked in hospital. Nurse training with assistance in writing nursing documentation is proven to improve the quality of nursing documentation. **Conclusion:** All studies show that standard nursing terminology education programs can improve nurses skills in nursing documentation. It's necessary to hold continous training for all nurses related to nursing language standards.

Keywords: Standardized Nursing Terminology; Education; Nursing Documentation.

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INTRODUCTION

Nursing documentation is an important source of information related to patient needs and nursing interventions in order to provide quality nursing care (1). A nurse is not only required to improve the quality of service, but is also required to document nursing care properly. Nursing documentation is used as a means of communication between interprofessional teams in nursing care actions Effective communication between interprofessional teams is one of the important pillars in teamwork that is useful for improving service quality and patient safety (2). In writing nursing documentation, problems often arise including nurses sometimes changing and manipulating reports, data is out of sync, writing diagnoses and nursing interventions that are repeated intentionally, and nurses often still hide events. (3). Problems with nursing documentation occur due to lack of nurse supervision in carrying out nursing documentation, lack of competence of nurses in writing nursing documentation, and lack of confidence and lack of motivation of nurses in carrying out nursing documentation (4).

Standardized Nursing Terminology was developed and used to maintain consistency in professional vocabulary and high quality in documentation. According to the World Health Organization (WHO), Standard Nursing Terminology is a collection of terms used by nurses in the clinical assessment of

patients, management and nursing care of patients. (5). One standard of nursing terminology that is often used is North American Nursing Diagnosis Association (NANDA), Nursing Intervention Classification (NIC), Nursing Outcome Classification (NOC). The use of nursing terminology itself has various benefits including to improve communication between nurses and other health professionals, to increase nursing visibility, to improve nursing care, and to ensure nurse compliance with nursing standards (6).

Although nursing terminology standards have been set, there are still many nurses who do not use nursing language standards well. A study in Nigeria showed that only 60% of nurses knew the steps in the nursing process well. Nurses who are able to correctly define standard nursing language are 5.4% and nurses who know the full meaning of NANDA NIC NOC are only 3.1%. The knowledge of nurses who took part in research on standard nursing language showed that nurses who had high knowledge were 26.2%, moderate knowledge was 44.6%, and 29.2% had low knowledge. According to the research, the majority of nurses, 83.8% agreed that the use of standard nursing language helps nurses in providing quality nursing care; 67.7% of nurses agree that the use of standard nursing language makes nursing practice unique, 55.4% consider the use of standard nursing language to increase workload, while only 24.6% of nurses often use the nursing process for patient care (7). It can be seen from the research above, for nurses the use of standardized nursing language is very important for quality nursing care, but currently the use of standardized nursing language is still not done optimally.

In practice, writing poor nursing documentation can cause major problems in evaluating patient care and can lead to miscommunication between nurses and the rest of the healthcare team. Ineffective documentation has the potential to affect patient safety. Poor nursing documentation can put patients, staff, and organizations at risk of receiving considerable physical and legal harm (8). A study states the need for appropriate nursing documentation instruments to be used in health care facilities. Provision of adequate health care documentation related to patients' physical and mental health problems is very important for nurses to use in improving the quality of nursing care and patient safety (9) Documentation of nursing care according to important standards is carried out to meet patient needs and patient safety, where patient safety is one indicator of service quality (10).

To overcome various problems in the implementation of nursing documentation that is less than optimal, this study recommends holding a training program to increase nurses' knowledge and familiarize nurses with institutional policies regarding documentation and providing adequate documentation materials (11). Nursing language education program standards are proven to improving the quality of nursing documentation. This is in line with research conducted in Brazil which states that educational programs are effective in improving the quality of medical records (12). This educational program is to train nurses in improving the quality of nursing care that has been developed by educational institutions (13,14). This program contains clinical practice reasoning strategies, such as case discussions to train nurses to think critically and use used documentation instruments and evaluate the quality of nursing care documentation. There is still little research related to the effect of standard nursing terminology education programs on the quality of nursing documentation. For this reason, the aim of this study was to explore the effect of a standard nursing terminology education program on the quality of nursing documentation.

METHODOLOGY

Study Design
This systematic review was conducted as a comprehensive study which synthesized and selected relevant studies on the effect of standard nursing terminology education programs on the quality of nursing documentation. Assessment of study quality used the Joanna Briggs Institute Guidelines and used PRISMA to analyze the systematic review.

Search Strategy
The electronic databases used are Scopus, ProQuest, Web of Science, Science Direct, PubMed and Research Gate. The database search was carried out in February 2022. The limitation of the search for articles was to formulate inclusion and exclusion criteria using the PICOS format (P = population, I = intervention, C = comparison, O = results, S = type of research). The literature search with three keyword groups based on Medical Subject Heading (MeSH) and the Boolean operators AND and OR. The search strategy is set as ("Standardized Nursing Terminology" OR "Standardized Nursing Language" OR "NANDA") AND ("education" OR "educational program" OR "training") OR ("nursing process" OR "nursing care plan" OR "nursing documentation"). The criteria for the articles used are articles published in 2017 - 2022, full text, using English and Indonesian with cohort studies, experimental studies, or randomized controlled trial research designs.

Inclusion Criteria

The inclusion criteria for the systematic reviews published in this review were based on the PICO (Participant, Intervention, Comparison, Outcome) format, that is:

Population/ problem. Articles or journals containing topics about the effect of the standardized nursing terminology education program on the quality of nursing care documentation.

Intervention. Standardized nursing terminology education program

Comparation. No comparison intervention

Outcome. Quality of nursing documentation

Study Design. Cohort Study, Quasy eksperimental Study, and Randomized Control Trial

Year established. Articles or journals published in 2017-2022

Language. English and Indonesian

Study Selection

A total of three hundred and ninety-five publications resulting from a database search (Figure 1), publications with proven duplication (n = 90) were removed from the results, leaving 315. Then the researcher screened and assessed titles (n = 37), abstracts (n = 14) and the full text (n = 10) of any publications that were not relevant to the study inclusion criteria (Table I). We found ten full-text articles that were eligible for systematic review. During the literature screening process, the researcher defined the general reasons for the exclusion criteria, including irrelevant types of studies, there was no complete explanation of the effect of the standard nursing terminology education program on the quality of nursing documentation.

Assessment of study quality and risk bias

In critical assessment studies use JBI to analyze the methodological quality in each study. Critical assessment was used for Cohort Studies, Quasi-Experiments, and Randomized Control Trials (n = 10). There are several assessments including a score of 'yes', 'no', 'unclear' or 'not applicable'. Each criterion with a 'yes' score is awarded one point. A critical assessment to assess the quality of eligible studies was carried out by three investigators. The score limit during the critical assessment determined was above 50% which had been agreed upon by the three researchers. Low quality studies were not included in this study. In the final screening, ten studies achieved a high score of more than 50% and were ready to synthesize data.

Data Extraction and analysis

A structured form was used to extract information from the included articles ranging from author, country, year, study design, sample size, participant description, measurement instrument, duration and frequency, intervention, outcome analysis, and outcome article to evaluate the effect of the intervention. These data are summarized in Table I.
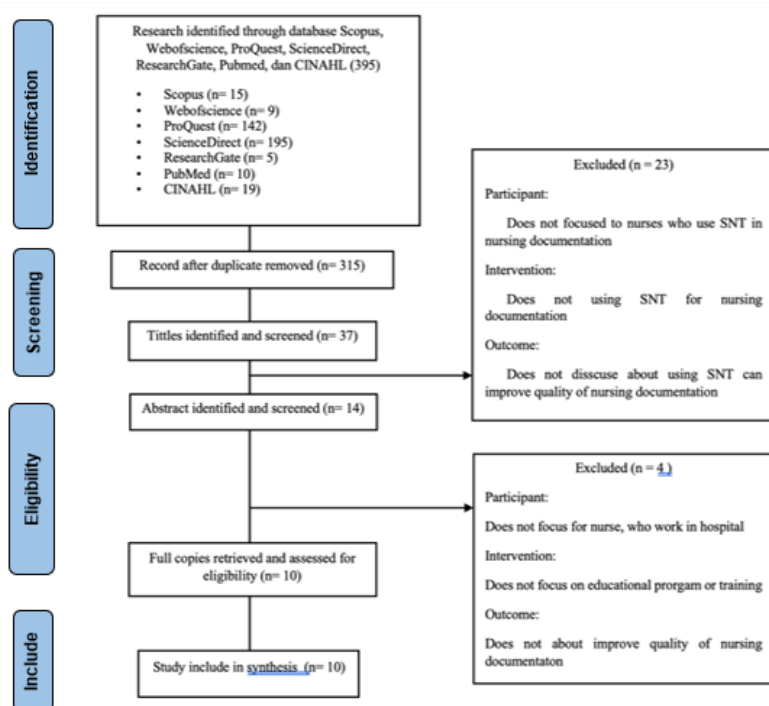

Figure 1 : Flow chart of study selection

RESULTS

Study Characteristic

The majority of articles used have a cohort study, experimental design, and randomized control trial. Ten selected articles that have met the inclusion criteria (Figure 1). The study analysing about the effect of a standardized nursing terminology education program on the quality of nursing care documentation. According to this systematic review there are four studies conducted in Brazil (12,13,15,16), two studies conducted in Indonesia (17,18), one study conducted in Nigeria (19,20), one study in Yunani (21), another one study in Iran (22). Most studies use the Quality of Nursing Diagnosis, Interventions and Outcomes (Q-DIO) instrument to measure the quality of nursing documentation after being given an intervention in a standard nursing terminology education program. The instrument consists of 29 question items which are divided into four concepts, namely nursing diagnoses as a process with eleven question items, nursing diagnoses as a product with eight question items, nursing interventions with three question items and nursing outcomes. a total of seven question items. All study. All participants in this study were nurses who worked in hospitals and were given the intervention of the NANDA, NIC, and NOC educational programs. All research that includes nurse education or training programs in writing nursing documentation based on NANDA NIC

Table I : Characteristics of included systematic reviews

No	Author, Year	Country	Methods	Sample	Instrument	Interventions	Outcome	Result
1	Silva De Melo et al., 2019	Brazil	Quasy eksperimental study	15 nurses	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	This educational program intervention is carried out with meetings for two weeks with a duration of 2 hours per meeting 1) First meeting: In the first session of providing material on the Nursing Process, the nurse then began to collect patient data using the instruments provided 2) Second meeting: Nurses perform diagnostic reasoning and clinical decision making, diagnosis, outcomes, and interventions. 3) Last meeting: Nurses are given time to complete case studies by formulating processes according to standards	Nursing Diagnosis, Interventions and Outcomes	Education program improve quality of nursing documentation
2	Setyaningrum, Nurjannah and Rustiyaningsih, 2019	Indonesia	Pre-experimental study	21 nurses and 86 Medical Records (MR)	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	1) First stage : The first session was given seminars/materials related to documentation of nursing care, the nursing process with the standardization of NANDA NIC NOC, and documentation of quality nursing care. 2) Second stage : Then the nurse completes the nursing documentation on the medical record sheet using the knowledge gained during training 3) Stage three : Discussion and evaluation	Nursing Diagnosis, Interventions and Outcomes	Training of nursing documentation system based on NANDA NIC NOC could improve the quality of nursing documentation
3	Linch et al., 2017	Brazil	Quasy eksperimental study	40 nurses	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	The intervention during five months, with a total of 30 hours in 20 meetings. 1) First session: Theoretical approach about using NNN for diagnoses, interventions and outcome, and then dicussion 2) Seconde session: Discussions of actual clinical cases of hospitalized patients	Nursing Diagnosis, Interventions and Outcomes	The educational intervention nursing documentation using NANDA NIC NOC effective improving the quality of nursing records

No	Author, Year	Country	Methods	Sample	Instrument	Interventions	Outcome	Result
4	Chinma Stella Adereti and Adenike Ayobola Olaogun, 2018	Nigeria	Quasy eksperimental design	32 nurses	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	The educational package: 1) Module 1: This module contains an overview of the nursing process; 2) Module 2: Module two contains NANDA Standard Nursing Language NIC NOC 3) Module 3: The third module contains a nursing care plan standard 4) Module 4: The fourth module contains the Benefits of EHR and how to use electronic SNCP.	Nursing Diagnosis, Interventions and Outcomes	Standardized Nursing Care Plans with NANDA NIC NOC can improving quality of nursing documentation
5	Patiraki et al., 2017	Yunani	Quasy eksperimental study	19 nurses	a questionaire developed and standardized in the context of Chatzopoulus (2010)	Clinical seminar direct and indirect teaching and learning : 1) Lectures 2) Bidirectional questions- replies 3) Group working 4) Case studies	Nursing Diagnosis, Interventions and Outcomes	The significant effect education intervention on nursing care plans
6	Larijani and Saatchi, 2019	Iran	Randomized Control Trial	80 nurses	Using NANDA, NIC and NOC for check the nursing documents.	1) The intervention given in this study was NANDA, NIC and NOC training related to the Safety/Protection domain, the intervention was carried out in four sessions of 4 hours each with a period of 2 months 2) NANDA NIC NOC training in this study focused on training in signs, symptoms and etiology of nursing diagnoses	Nursing Diagnosis, Interventions and Outcomes	The NNN system training, can improve the nursing care plan related to the patient safety
7	Estudio et al., 2019	Brazil	Quasi-experimental study	5 nurses	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	Training: Lecture class on SLSs was held directed to patients with cardiovascular disorders using instrumen a) Nursing history and physical examination, with filing in of subjective and objective data; b) Nursing diagnoses and Nursing outcomes; c) Nursing interventions.	Nursing Diagnosis, Interventions and Outcomes	Training and use of an instrument based on diagnosis standardized language systems, interventions and results has improved the quality of nurses' records

Continue...

No	Author, Year	Country	Methods	Sample	Instrument	Interventions	Outcome	Result
8	Adubi, Olaogun and Adejumo, 2018	Nigeria	Retrospective record	270 nursing process booklets	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	The content of SNLCEP: 1) Module 1: The history of the development of Standard Nursing Language. 2) Module 2: Introduction the concept of NANDA-I, NOC and NIC. 3) Module 3: Relationship between Nursing Diagnosis, Classification of Nursing Outcomes and Classification of Nursing Interventions (NANDA NIC NOC). 4) Module 4: Documentation of nutsing using NANDA NIC NOC	Nursing Diagnosis, Interventions and Outcomes	The Standard Nursing Language Continuing Education Program has a significant effect on the quality of documentation
9	de Oliveira and Peres, 2021	Brazil	Quasy experimental study	14 nurses	Quality of Diagnoses, Interventions and Outcomes (Q-DIO) instrument	This training consists of 9 sessions, each session lasts for 2 hours. The training consists of providing material and practical application of NANDA NIC NOC	Nursing Diagnosis, Interventions and Outcomes	Using the NANDA NIC NOC system is better on the quality of nursing documentation
10	Hendriana and Pranatha, 2020	Indonesia	Quasy experimental study	29 nurses	Questionaire and NANDA, NIC, NOC	Nurses are included in training for filling out nursing documentation using standards nursing language NANDA NIC NOC and then assessed pre post training on quality of documentation	Nursing Diagnosis, Interventions and Outcomes	After the implementation of the Standard Nursing Language based on NANDA, NOC and NIC, it was proven that there was an increase in the quality of filling out nursing documentation

NOC is believed to be able to improve the quality of documentation and nursing care.

Respondent Characteristic
Characteristics of respondents in all studies are nurses who work in hospitals who does nursing documentation and medical record patient. The number of respondents ranging from five to forty nurses.

Intervention Characteristic
Methods in applying standardized educational terminology include: seminars or meetings, in which seminars include lecture sessions/material explanations and training. First, lecture sessions, lectures on nursing care documentation, nursing processes, and standardization of NANDA NIC NOC (n= 6) (12,13,15,17,21,23). Given material related to the Nursing Process, the nurse then collects patient data using the instruments that have been provided. There is a two-way question and answer session in the lecture. A study using an educational package developed by the authors from literature studies and learning modules, including Module 1: The History of Standard Nursing Languages. Module 2: Introduction to the concepts of NANDA, NOC and NIC. Module 3: Relationship of NANDA, NIC, and NOC, and Module 4: Nursing documentation using NANDA NIC NOC (n=1) (24) Other educational packages are Module 1: Overview of the Nursing Process; Module 2: Standard Nursing Language, Nursing Diagnosis (NANDA-I), Classification of Nursing Outcomes (NOC), and Classification of Nursing Interventions (NIC); Module 3: Standard Nursing Care Plans, and Module 4: Benefits of EHR and practical sessions on the use of electronic SNCP (19). Two articles were not identified using the lecture method (18,22).

In the second session is training, training for filling out nursing documentation using standards nursing language NANDA NIC NOC (n= 1) (18). Nurses perform diagnostic reasoning and clinical decision making, diagnosis, outcomes, and interventions (n= 1) (12). Training in the use of standard NANDA NIC NOC nursing language focused on training

in signs, symptoms and etiology of nursing diagnoses (n= 1) (25). In the training session participants were asked to complete a case study from each clinic and the inherent aspects of the quality of nursing documentation (n= 1) (12). There is a study that contains in the training of nurses there are group discussion sessions about actual clinical cases of hospitalized patients (n= 2) After that, a pre-training assessment was carried out to evaluate the quality of nursing documentation. Most studies use Quality of Nursing Diagnosis, Intervention and Outcome (Q-DIO) to measure the quality of nursing care documentation (n=6) (17).

The duration of education program varied from biweekly meetings with 2 hours (12), 30 hours in 20 meetings (13), 9 training sessions lasting 2 hours (23) 7 months and the hours of teaching were 2 hr 30 min (17), the educational intervention carried out is a clinical seminar that lasts 60 hours, with the same distance in 10 days (Patiraki et al., 2017) two meetings duration of seven hours per meeting (15) for 2 months the teaching method in each ward and the 7th month the nurses were given re-learning and teaching hours were 2 hours 30 minutes (24), the intervention lasted 30 weeks. Each group attended the training for three consecutive days a week for a total of 10 hours 10 minutes to discuss the contents of the module (19), intervention in four sessions, each lasting 4 hours over a 2 month period (22) the first session was a 100-minute lecture and question-and-answer discussion, then the second session was held for 100 minutes containing material on forms that must be filled out for documenting nursing care, and the third session was held for 100 minutes containing case examples, training was carried out for 5 days (17) and one articles not explained (18)

To evaluate the quality of nursing documentation after an educational program was conducted, most of the studies used the Q-DIO instrument. The Q-DIO questionnaire consists of 29 items divided into four subscales. Items are evaluated on a three-point scale (zero undocumented, 1, partially documented, and 2, overall documentation). The minimum score for the questionnaire is zero and the maximum is 58 points. The first dimension of the Q-DIO questionnaire, namely "Nursing Diagnosis as a Process", has 11 items and the maximum score is 22. In this subscale, questions are about history taking. The second dimension, "Nursing Diagnostics as a Product", has eight items and a maximum score of 16, with questions about diagnostic labels. The third subscale, "Nursing Interventions", has three items and a maximum score of six. Contains related interventions and planning. The fourth subscale, "Nursing Outcomes", has seven items and a maximum score of 14 containing

evaluations of goals and outcomes (12,13,15,17,19,23,24) The other one using a questionaire developed and standardized in the context of Chatzopoulus (2010) (26) and using NANDA, NIC, NOC for examines the nursing documents (18,22).

NANDA NIC NOC nursing documentation system education or training program effectively improves the quality of nursing documentation (12,13,15,17–19,23,24,26) Program edukasi NANDA NIC NOC juga dapat meningkatkan rencana asuhan keperawatan terkait keselamatan pasien (22).

DISCUSSION

Nursing documentation is an important aspect in the assessment, planning, and implementation of the nursing process. Taxonomies are used as a way to standardize the language of nursing. Several terms have been used, most of which are useful in improving the quality of care. One example of standard terminology that is often used is the NANDA taxonomy, Nursing Outcomes Classification (NOC) and Nursing Interventions Classification (NIC) (30). A nurse must use standard nursing terminology to ensure that nursing care is provided according to standards. The use of standard nursing terminology for documentation of nursing care is very important for both the nursing and nursing professions. The benefits of using standard nursing terminology are improving better communication between nurses and other health care providers, improving the quality of nursing interventions so that patients get better care (31).

One way to apply standard nursing terminology is through education or training programs. Educational programs that aim to train nurses can improve the quality of nursing documentation. These programs provide strategies such as lectures, discussion of real clinical cases to promote critical thinking, training in filling nursing care according to nursing terminology standards, and then use of tools to evaluate quality (12). A study showed that interactive lectures resulted in significantly greater learning and participant satisfaction. One's skills can be improved when taught through the simulator method. The combination of lectures and simulations has proven to be effective in increasing the knowledge of the trainees (32).

Educational packages that can be used in educational program learning modules include Module 1: History of the Development of Nursing Language Standards, Module 2: Introduction to the Concept of Nursing Diagnosis NANDA-I, NOC and NIC, Module 3: Relationship of Nursing Diagnosis, Classification of Nursing Outcomes and

Classification of Interventions Nursing (NNN), and Module 4: Documentation of care using NNN in documentation. The results of the study show that after administering the nurse teaching material module, the quality of nursing care documentation increases significantly. Experience alone cannot improve nurse skills but must be balanced with increased knowledge (24). Other studies also show that providing nursing training modules can help a person acquire the nursing knowledge, skills, and attitudes needed to carry out the nursing process: Assessment, diagnosis, planning, implementation, and evaluation. Increased clinical competence contributes to their confidence in carrying out the tasks assigned to them (33).

The duration of the educational program can be varied from biweekly meetings with 2 hours (12), 30 hours in 20 meetings (13), 9 training sessions lasting 2 hours (23) 7 months and the hours of teaching were 2 hr 30 min (17), depending on the needs and the series of events. The difference in time in the training depends on the needs of the organizers. For example, some nurses have different shift schedules and not all nurses can be in training at the same time, so the training is split into three periods. Since the tutors in this training work from Monday to Saturday, the training plan is also coordinated with the tutor's schedule, so instead of all groups attending in the morning, only from the afternoon to the evening (17).

Standardized nursing language education interventions have a significant effect on the quality of nurse documentation. Standard nursing language education interventions improve skills and documentation by nurses. Standard nursing care plans provide nurses with a guide to use as reference material in planning and documenting care. Improved quality of documentation after educational interventions has been reported in several studies (19). With standard nursing language education programs, nurses can be better able to identify nursing diagnoses, formulate outcomes, and interventions. Nurses acquire knowledge and develop appropriate attitudes and are better prepared to fill out nursing documentation sheets (20). One way of providing education to improve the quality of nursing documentation is through coaching. This coaching strategy can be used to build a trusting relationship, share the desire to master new information and skills. The results of the coaching system can be estimated from the assessment and criticism of the coaching members. Such a coaching method can encourage members to effectively acquire new abilities (34).

In order for an education or training program to run well, it must be supported by the use of appropriate media and methods. The right method is used from various literatures, namely lectures, discussions, and training using module media and pocket books. According to Chaghari et al. (2017), some experts argue that good training uses interesting methods and materials, so that the most important thing in training is the teaching method and how the material presented by resource persons is easily accessible and interesting according to its objectives. The NANDA NIC NOC education program is expected to increase knowledge and make it easier for nurses to document nursing so that nurses can understand and practice it (35). There are factors that can affect the acceptance of each employee in the training. Influencing factors include true beliefs and values about training, rigorous selection of employees to engage in training, relevance of training content, clear training instructions, support from colleagues, supervisors and organizations, and professional development are the keys to successful transfer of training. Nursing managers need to understand the factors that influence the transfer of training to maximize the benefits of training. A manager must be aware of peer opposition and find ways to prevent it (36).

CONCLUSION

Nursing terminology standard education program with lecture method and training in filling out nursing documentation has been proven to improve nurses' skills in nursing documentation and documentation quality.

Clinical Implication
The studies reviewed showed that the provision of nursing terminology standard educational program interventions to nurses could effectively improve the quality of nursing care documentation. The results of this study are certainly very useful for nursing management in hospitals because of the importance of standard nursing terminology education programs to improve the quality of documentation and have an impact on improving the quality of nursing care. Further research is needed related to the stages and evaluation of an effective education program implemented in hospitals.

ACKNOWLEDGMENT

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