

Development of nursing clinical supervision application

Ernawati¹, Netha Damayantie¹, Mursidahdewi¹, Mulyadi²

¹ Program Studi Sarjana Terapan Keperawatan Poltekkes Kemenkes Jambi

² Program Studi Diploma III Keperawatan Poltekkes Kemenkes Palembang

*Corresponding author's email: ernawatisyarif@yahoo.com

Accepted: 26 September 2023; revision: 8 December 2023; published: 30 December 2023

Abstract

Background: Nursing services require an effective and efficient nursing management system, so that nursing resources can be directed to produce quality nursing services, one of which is through nursing supervision. Supervision is a personal observation of functions or activities in the nursing care process, and delegations of functions or activities to maintain accountability and evaluate nursing care appropriately. This research aims to develop a clinical supervision application to improve the quality of implementation of nursing supervision in Jambi city hospitals. Clinical supervision research is designed with an application as guidance and information for room heads, team leaders, and implementing nurses in carrying out clinical supervision so that it can improve the quality of nursing supervision in hospitals.

Method: Research design with a mixed methods approach, namely qualitative research on conceptual development and quantitative research used in the product development and testing phases. The research procedure uses analysis-design & development-formative evaluation steps with the Dick and Carey procedure. The research was carried out in three hospitals in Jambi City, namely Abdul Manap Hospital, Bratanata Hospital, and Bhayangkara Hospital Jambi in April - August 2023 with the research subjects being all room heads totaling 16 people and team leaders totaling 24 people.

Result: There is a difference in user knowledge about nursing supervision before and after the development of the Android-based clinical nursing supervision educational application with a p-value of $0.000 < 0.005$.

Conclusion: The model for developing nursing clinical supervision applications using the Dick and Carey learning design approach is a systematic learning design model for developing effective and efficient learning programs. Nursing clinical supervision educational applications can be applied in hospitals by room heads in carrying out supervision in inpatient rooms.

Keywords: Development; education; clinical supervision; nursing.

INTRODUCTION

Nursing services require an effective and efficient nursing management system so that nursing resources can be directed to produce quality nursing services, one of which is nursing supervision. Supervision is personal observation of functions or activities, providing leadership in the nursing care process, delegating functions or activities to maintain accountability, and evaluating nursing care appropriately (1).

Based on research results, shows that the implementation of clinical supervision in the world in general has not been carried out effectively. According to research (2), Clinical supervision has become an important

element in nursing practice in England but its potential has not been fully realized (3), the implementation of clinical supervision in Portugal carried out by the head of the room has not been of a guiding nature and is more of a supervisory nature so that staff become stressed and frustrated. In addition, research conducted by (4) explains the description and evaluation of a basic training program to prepare nurses, midwives, and professional staff in clinical supervision using a role development model with 226 respondents, the majority of whom are nurses, the results show an increase in knowledge of 87.5%, skills of 87%, self-confidence of 85.5% and 95%, indicating that the training program is

useful and important for development. and confidence as a supervisor.

The results of the researcher's interview with the coordinator of the inpatient installation at Raden Mataher Jambi Hospital showed that up to now, tiered supervision has been carried out, but during the Covid-19 pandemic, supervision activities were not carried out, only in the form of routine activities, supervision activities were not optimal and carried out well. The research results of Apriana et al, (2017) show that nursing supervision at Raden Mataher District Hospital has only been carried out 58.9%, supervision activities are not yet guiding and evaluations are rarely delivered. According to the head of the room, the obstacles encountered in the implementation of supervision are the double duties of the head of the room such as having to attend meetings, and completing administrative tasks so that the supervision schedule that is drawn up is often not carried out according to schedule. Furthermore, interviews were conducted with the head of nursing at Abdul Manaf City Hospital and Bhayangkara Jambi Hospital. Nursing supervision has not been carried out on a scheduled basis and plans have not been made, activities are only provided with guidance at certain times.

Research on the development of professional nursing supervision education through training has been widely carried out, but using Android-based technology is not yet available, so it is important to increase the knowledge and ability of nurses in carrying out supervision, in addition to using an Android-based information system that is

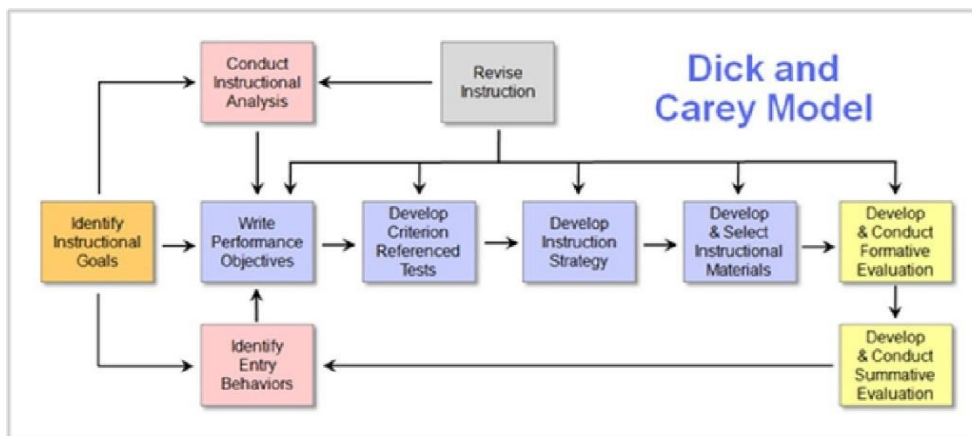
easy to access quickly, precisely, accurately and efficient and as an alternative to overcome space and time limitations in carrying out clinical supervision by supervisors to staff.

Based on the background description, the problems faced in implementing supervision in hospitals include: nurses' knowledge about supervision still needs to be improved and nursing supervision has not been carried out optimally. Supervision activities are the main task of the head of the room in improving nursing care services. Therefore, it is necessary to develop information and technology-based supervision education that can be used by nurses who can present and process various data and information, namely by using Android. From this condition, researchers are interested in researching the "Development of an Android-based nursing clinical supervision educational model to improve the implementation of supervision in hospitals"

METHOD

The research design uses the research and development (R&D) method, namely the process or steps to develop a new product or improve an existing product. Research design with a mixed method approach, namely qualitative research in conceptual development and quantitative research used in the product development and testing phases (5).

The research procedure uses analysis-design & development-formative evaluation steps with the Dick and Carey (2015) procedure as shown below (6):



This research aims to develop clinical supervision applications to improve the quality of implementation of nursing supervision in Jambi city hospitals. Clinical supervision research is designed with an application as guidance and information for room heads, and team leaders, in carrying out clinical supervision so that it can improve the quality of the implementation of nursing supervision in hospitals.

RESULTS

The research was carried out in 3 Jambi City hospitals, namely Abdul Manaf Hospital, Bratanata Hospital, and Bhayangkara Jambi Hospital in April - August 2023 with the research subjects being all 18 room heads and 22 team heads. The research process uses the Dick and Carey model with the following ten stages (6):

1. Determine instructional needs

The needs analysis was carried out by conducting interviews with the head of nursing and the head of the room as well as the head of the team at Abdul Manaf Hospital and Bhayangkara Jambi Hospital. Based on the results of interviews with the head of the nursing department, supervision had been carried out but was not optimal, especially during the Covid period, because many nurses had been transferred to Covid rooms. But now it has started to be activated by making a Director's Decree and preparing supervision instruments. Furthermore, interviews with 5 heads of rooms, 2 people said that the current nursing supervision had not been planned well, usually supervision was carried out when there were new employees to assess their ability to carry out nursing actions. And 3 heads of rooms said they rarely carried out supervision because the room was busy, especially if there were a lot of patients so the head of the room was involved in providing nursing care, there was not enough time, the head of the room had to attend routine meetings and management meetings.

The needs analysis was carried out by conducting interviews with the head of nursing and the head of the room as well as the head of the team at Abdul Manaf

Hospital and Bhayangkara Jambi Hospital. Based on the results of interviews with the head of the nursing department, supervision had been carried out but was not optimal, especially during the Covid period because many nurses had been transferred to Covid rooms. But now it has started to be activated by making a Director's Decree and preparing a supervision instrument. Furthermore, in interviews with 5 heads of rooms, 2 people said that clinical nursing supervision was not well planned. Usually supervision is carried out when there are new employees to assess their ability to carry out nursing actions. 3 heads of rooms said they rarely carry out supervision because they are busy in the room, especially if there are a lot of patients so the head of the room is involved in providing nursing care, there is not enough time, the head of the room has to attend routine meetings and management meetings.

2. Carry out Instructional Analysis

The second step is to carry out an instructional analysis by determining the main competency, namely the nurse's ability to understand clinical nursing supervision with sub-competencies of being able to understand the concept of supervision and being able to carry out clinical nursing supervision in providing nursing care according to the instruments that have been prepared.

3. Identify the target's initial behavior and characteristics

Characteristics of users are heads of rooms and heads of teams who have smartphone facilities. Researchers identified the characteristics of nurses to serve as guidelines and determine strategies and selection of useful teaching materials according to application needs in implementing supervision. Based on the results of interviews and filling out questionnaires, the majority of heads of rooms, 40%, were aged 26-35 years, length of service from 5-15 years (45%). Education for D3 room heads and nurses. Most room heads have never received supervision training and nursing care training based on 3S standards (SDKI, SLKI, and SIKI). According to the head of

the supervision instrument room for nursing documentation based on 3S is not yet available.

4. Determine specific instructional objectives

Make goals and statements that can be measured as initial behavior, which is a specific statement that must be carried out by the nurse. Researchers set specific goals, namely that nurses are able to understand the steps for implementing supervision, carry out assessments of supervision of nursing care, and carry out supervision assessments and follow-up. Able to use the supervision application that is installed on the smartphone. Make goals and statements that can be measured as initial behavior, which is a specific statement that must be carried out by the nurse. Researchers set specific goals, namely that nurses can understand the steps for implementing supervision, can carry out assessments of supervision of nursing care, and carry out supervision assessments and follow-up. Able to use the supervision application that is installed on the smartphone.

5. Develop learning outcomes assessment tools

The assessment tool/instrument is in the form of questions regarding the use of the application, as well as compiling an observation sheet on the use of the application, compiling a test tool to measure nurses' knowledge and understanding of supervision and the implications of nursing care based on 3S by carrying out pre and post -tests.

6. Develop instructional strategies

Developing instructional learning strategies which include: pre-learning activities, which have been developed, namely: nursing clinical supervision concept video, Nursing Care Assessment for Team Leaders, Documentation assessment format by room staff, Feedback from room heads to Team Leaders, archives Compile a manual for the use of the clinical supervision application and how to use it, carry out simulations on the use of the application and provide users with the opportunity to use the nursing clinical supervision application.

7. Develop instructional materials

Researchers prepare materials and prototypes of educational application devices according to the results of analysis of problems and needs in the field by designing storyboards for clinical supervision educational applications by instructional objectives by preparing storyboards for the development of nursing clinical supervision education.

Development of an Android-based clinical supervision education model called the Editha Application containing knowledge about the concept of supervision and nursing care from assessment to evaluation. The application of the supervision model describes the supervision activities between the room manager and the team leader regarding the implementation of nursing care for patients treated in the hospital inpatient room.

8. Carry out a formative evaluation

After the supervisory application development plan is prepared and completed, a formative evaluation is carried out in this research, namely:

a. Validation with experts in nursing management, the instruments used to assess the validation of materials are in the form of questions regarding suitability of the material, correctness of the concept and sequence of presentation of the material, clarity, accuracy of use of terms, and usefulness of the material. The validation results are declared worthy of field testing after being revised according to suggestions from the material expert.

b. IT/media expert validation includes product content, suitability for purpose, and ease of use as well as whether the product is attractive or not. The results of the media expert validation test include that the application title is still truncated, if there is incorrect login information, the application title is lost, can be maximized, the title is still truncated, systematic and text arrangement is improved, ii, the application is attractive and easy to use, worthy of field trials after revision.

c. One-on-one evaluation / one-on-one trial

The one-on-one trial phase was carried out on 3 room heads and 3 team leaders according to the criteria determined by the researcher. At this stage, the researcher interacts directly with the user, observes what the user does, and answers questions if anything is unclear. Researchers recorded input from users and explained the application of clinical nursing supervision.

The results of the trial were that one user was able to use the application well, but there was one user who had not been able to register due to an email error, This could be overcome so that the 6 people involved in the small trial were able to follow the steps for using the application starting from installation, registration and then inputting assessment data and supervision assessment. Heads of rooms and team leaders enjoy using the application and hope that the application can be used in hospitals to help and make it easier to carry out nursing supervision as well as being able to document nursing care directly in the application.

d. Small Group Evaluation

Small group evaluation aims to see the impact of changes in the results of one-on-one evaluations, identify problems faced by users and ensure whether users can use the product without interacting with the instructor.

Small group trials were carried out on 5 room heads and 10 team leaders on July 15, 2023. Participants had installed the nursing supervision application. The researcher acts as an observer, participants are allowed to fill in and if anyone asks questions, the researcher will provide an explanation and record suggestions submitted by the user. Apart from that, the researcher also evaluates the user's attitude and pays attention to the time required by the user to complete the product. The results of the small group test assessment based on the results of the questionnaire scored 95% and almost all users answered that they could open the application easily, the appearance

was attractive and innovative and the concept of supervision theory was clear and easy to understand. The head of the room and the team leader said they were happy with this application and that it was useful because it could make it easier to carry out nursing care.

9. Make revisions

The results of the formative evaluation are collected and analyzed for revision based on suggestions from material experts, media, and users by improving the appearance of the application, improving the menu system and adding assessment concepts.

10. Conduct large group trials/field tests

Field trials were carried out at Bhayangkara Hospital on August 3 2023 and Bratanata Hospital on August 4, 2023. Large group trials are product implementations to improve both structure, function, and user behavior during summative evaluation. Apart from that, users are also provided with a manual for procedures for using the application. The large group trial is to see the effectiveness and efficiency of product use and whether users can use the product without the presence of the researcher. Apart from that, in the large group test, a pre-test and post-test were carried out on users regarding knowledge of supervision and nursing care. The research method is to determine differences in user knowledge before and after using the application using a one-group pretest-posttest design.

The research results show that the user's knowledge before using the application using the Shapiro-Wilk test of normality with a p-value = 0.165 and after using the application 0.222 means greater than 0.05, thus it can be concluded that the data distribution is normally distributed.

Next, a paired t-test analysis is carried out as follows:

Table 1. Knowledge analysis results before and after using the supervision application clinical at the head of the room and team leader

Knowledge	Mean	t	Df	Sig.(2-tailed)
Pre Test	14	8215	39	0,000
Post Test	19			

Based on the results of the data analysis, there is a significant difference in knowledge before and after using the application with a p-value of $0.000 < 0.05$. In conclusion, there is an influence on user knowledge before and after using the clinical nursing supervision application. From the observation results, it was found that the application of clinical nursing supervision during a large group trial at Bhayangkara Hospital and Bratanata Hospital could be clearly understood, easy to use, and by needs and could be applied in carrying out supervision of nursing care in the hospital's in-patient room. Apart from that, users were also very happy if the clinical nursing supervision application could later be implemented by room heads and team wards in carrying out supervision in the hospital's in-patient room.

DISCUSSION

Research and development of clinical supervision educational applications aims to improve the implementation of supervision by the head of the room to the team leader. The clinical nursing supervision application development model using Dick and Carey's learning design approach is a systematic learning design model for developing effective and efficient learning programs. This model consists of 10 stages that are interconnected and interrelated. For each stage, it has components, namely learning, teaching, instructor, material, and environment.

The stages of systematic learning design are problem analysis, design, development, implementation, and evaluation. One of the components of the model is cognitive and behavioral elements which focus on how students respond to the stimuli given (7). The Development of clinical supervision education contains material in the form of nursing supervision videos, nursing care assessments, assessment formats, and archives. The resulting Android-based product can be used by room heads and team leaders. The results of the research at the stage of determining problems and needs found that the implementation of supervision had not gone according to plan due to the busyness of the head of the room,

workload, and sometimes the head of the room was also involved in the implementation of nursing advice. Apart from that, the hospital has not yet created an instrument for implementing supervision, supervision activities are only incidental. This is in line with research conducted by Oktanviani in 2019, (8) in one hospital the implementation of supervision was not yet optimal because there was no planned schedule, assessment instruments, and supervision had not been well documented.

The results of developing nursing supervision education applications after validation from media, material, and practitioner experts are worthy of trial after revision. Next, a small group trial was carried out with the results of the score category being good and according to users, the application was easy to use, interesting, and useful for application in carrying out supervision in the hospital. After the small group trial was carried out, it was followed by a field trial to find out the difference in knowledge before and after using the supervision application. The results of the analysis showed that there was a difference in the knowledge of the room head and team leader after using the application with a p-value of $0.00 < 0.05$.

The results of research based on information technology on supervision have been carried out, such as research by Cameron et, al, (2015) (9) which is based on information technology on clinical supervision with the title Remote supervision of medical training via Videoconference in northern Australia: a qualitative study of the perspectives of supervisors and trainers, the aim of which is to evaluate supervision models using technology for training junior medical officers in rural areas of North Queensland Australia shows that the results of research that remote supervision via videoconference provides a guide for training participants to support the provision of appropriate care to patients. However, this requires resources for improving skills, and training in the use of surveillance via video conferencing.

The development of educational media for nursing clinic supervision using Android-based electronic media is one of the developments in the health information

system which aims to make it easier for supervisors to carry out nursing supervision. Currently, the use of information technology has become a necessity in everyday life to be able to provide data needed by users quickly, be easy to operate, and have a fast and accurate documentation and reporting system (10)(11). The application of multimedia technology is expected to be able to provide changes in the implementation of nursing supervision so that it can motivate heads of rooms in carrying out nursing supervision to overcome time constraints. The development of a nursing supervision application has advantages, including more innovative and interactive learning, supervision can be carried out according to a schedule, there is feedback from the supervisor and the results of supervision can be immediately documented.

CONCLUSION

1. The clinical nursing supervision application development model using Dick and Carey's learning design approach is a systematic learning design model for developing effective and efficient learning programs.
2. Based on validation from media experts, meteorologists, and practitioners, clinical nursing supervision applications are easy to understand, clear, interesting, systematic, and useful for users and are worthy of trial. The results of the small group test assessment based on the results of the questionnaire scored 95% and almost all users answered that they could open the application easily, the appearance was attractive and innovative and the concept of supervision theory was clear and easy to understand. The head of the room and the team leader said they were happy with this application and that it was useful because it could make it easier to carry out nursing care.
3. There are differences in user knowledge about nursing supervision before and after the development of the Android-based clinical nursing supervision education application.

REFERENCES

1. Marquis. Leadership Role and Management Function of Nursing: Theory and Application. 9th ed. Philadelphia: Wolters Kluwer Health: Philadelphia; 2017.
2. Driscoll J, Casedy P. Supervision for supervisors: Icing on the cake or a basic ingredient for the development of clinical supervision in nursing? *Reflective Pract Nurs* [Internet]. 2013;150–76.
3. Cruz SSSMS. Clinical supervision in nursing: Effective pathway to quality. *Procedia - Soc Behav Sci*. 2011;29(Iceepsy):286–91.
4. Harvey S, Spurr P, Sidebotham M, Fenwick J. Nurse Education in Practice Describing and evaluating a foundational education / training program preparing nurses , midwives and other helping professionals as supervisors of clinical supervision using the Role Development Model. *Nurse Educ Pract* [Internet]. 2020;42(November 2019):102671.
5. Creswell J. Qualitative, quantitative, and mixed methods approaches. In: *Research design*. 2013.
6. Dick & Carey. *The systematic design of instruction*. 8 ed. New Jersey : Person; 2015.
7. Rusdi M. *Penelitian Perlakuan Kependidikan (Educational Treatment-Based Research)*. INDONESIA: Raja Grafindo Persada :Depok; 2020.
8. Oktaviani MH, Rofii M. Gambaran Pelaksanaan Supervisi Kepala Ruang Terhadap Perawat Pelaksana Dalam Keselamatan Pasien. 2019;2(1).
9. Cameron M, Ray R, Sabesan S. Remote supervision of medical training via videoconference in northern Australia : a qualitative study of the perspectives of supervisors and trainees. 2015;1–10.
10. Mayer.E.Richard. *Multimedia Learning* [Internet]. Second Edi. Cambridge University Press : New York; 2009.
11. Desi Harmatiwi D, Sumaryani S, Maria Rosa E. Evaluasi Pelaksanaan Supervisi Keperawatan di Rumah Sakit Umum Daerah Panembahan Senopati Bantul. *J Medicoeticolegal dan Manaj Rumah Sakit* 1018196/jmmr2016. 2017;6(1):47–54.