Full Length Research Paper

Developing prototype model of discharge planning with CD learning media in Indonesia

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Discharge planning (DP) is a crucial part in continuous nursing care and its aim is to prepare the patient and the family to return home. Discharge planning has not been optimally conducted. The study's purposes are to identify the implementation of discharge planning, to develop an organized discharge planning model and to evaluate the implementation of this model. An action research with triangulation studies approach was utilized, in which at the first stage, the on going discharge planning was assessed. The second stage included the implementation of development and the trial of CD-based DP. The third stage was the evaluation of the model by means of documentation, questionnaire and patient and nurse interviews. It was found that nurse's knowledge of DP was significantly improved after the DP model was introduced (mean before = 11.6, mean after = 16.81 and p value = 0.000). CD-based DP learning was also found to be significantly increased by the number of DP given by nurses (mean before = 50.3, mean after = 59.33 and p value = 0.000). In addition, study of the nursing documentation indicated that the DP CDs have been used by 62 patients. From the interviews with nurse leaders and staff, it was identified that the DP CDs were perceived as useful to assist DP. Accordingly, patients and their families asserted that the DP CDs were very helpful.

Key words: Discharge planning, information technology, learning media, nursing.

INTRODUCTION

Everybody is longing to live a healthy, active and productive life. However, when they are in unhealthy condition, they search for help from health services. One kind of health services is the hospital, which gave health service from multidisciplinary. A good collaboration is expected between multidisciplinary such as doctors, nurses, nutrition specialists, physiotherapists, pharmacists and others to be able to give good health services to the community.

The nurse is one kind of caregiver who had a big contribution in increasing the quality of health service. The nurse is considered as the sharp point of health services in hospital since he/she has the longest interaction time with patients and families. Nurse acts as host in hospital ward and assists patients and families within 24 h a day. Perry and Potter (2001) defined that nurse's role as caregiver includes collaborator, educator, counselor, change agent and researcher. Nursing has

characteristics of profession, including knowledge of The body which is different from other profession such as: Altruistic, that is, having organizational profession, standard and ethics profession, accountability, autonomy and partnership (Leddy and Pepper, 1993 in Nurachmah, 2004).

Nowadays, there are reports about nursing service which is still not optimal. One of such activities is the discharge planning. Discharge planning is a part of nursing process and also the main function of nursing care (Carpenito, 1995). It is a systematic planning process which is being prepared for a patient who plans to leave the nursing care institution (hospital), but still wants to maintain the continuity of nursing care. Patients who did not get discharge planning, especially those who need home care, health counseling or elucidation and community service will be rushed back to the emergency room within 24 to 48 h later and then return home again (Swanburg and Swanburg, 1999). The relapse condition will of course, give disad-vantages to patients, families and also the hospital.

The hospital which often experiences this condition

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will be left by the costumers, sooner or later. The objective of discharge planning is to minimize the impact of a health condition, for example chronic diseases with long term care, and increase the satisfaction of the client and family towards the health service system (Craven and Hirnie, 2000).

Many evidences showed that the discharge planning effectively decrease disease complication and recurrence (Wilkinson, 1996).

Research in two different hospital wards in Jakarta showed that in both X and Y hospitals, 36 (Fahruji and Supriati, 2006) and 20% (Ramie et al., 2006) of nurses have not done discharge planning. In Y hospital, 56% of discharge planning do not have a standard structure and are not based on the need of patients.

Ramie et al., (2006) also stated that 84% of nurses had no course curriculum in doing discharge planning and 24% of nurses stated that the learning media provided by hospitals is not passable for doing discharge planning, thus there is problem in carrying out a good discharge planning.

In other research about the use of discharge planning, stroke patients showed an increase in readiness to leave the hospital and be given discharge planning according to the program. Discharge planning gave an increasing effect in readiness and coping to stress, from 78.9 - 88.9% (Hariyati, 2004).

Considering how important the implementation of a structured discharge planning is, the researchers were interested in assessing more, especially for those problems that are related with discharge planning and the determinant factors which affect its successfulness. After doing the identification process, researchers developed a model of discharge planning which is being organized and based on information technology. Being organized meant there will be a standard prototype model in the discharge planning, starting first with the patient coming to the hospital and returning home, have a slot system, a course document, an exact and accurate documentation and an evaluation system. Beside that, the information technology model is also being developed due to the development of science and technology and also has the ability to simplify the patient's learning process, not only by leaflet and poster, but also by the interactive multimedia.

Purpose

To identify the implementation of discharge planning in hospital ward and to develop its prototype model which is being organized and based on information technology media.

Specific goals

1. To identify the implementation of discharge planning.
2. To develop the prototype model of discharge planning, slot system, course document and computerize discharge planning documentation system and learning media based on interactive media such as CD/ compact disc.

Study use

For caregiver

To evaluate the implementation and problems that are being faced in discharge planning. Beside that, it can help to develop an efficient discharge planning model, which can be implemented to be a basic in developing the prototype of discharge planning in hospital.

For patient and family

To help the preparation and continuity care at home and to prevent reoccurrence risk.

For educational institution

To become the basic for further research about the correlation between this model and the client's satisfaction level, as well as the prevention of relapse level. Beside that, this model has the potential to get intellectual property right, thus it can be used in other hospitals

METHOD

Design

This study used both action research and triangulation studies approach. Triangulation is a research approach that combines more research strategies in a single investigation (Streubert and Carpenter, 1999). Both quantitative (by questionnaire instrument) and qualitative (using brainstorming interview) methods were employed in the triangulation approach.

Action research is a collaborative approach to inquiry or investigation that provides people with the means of taking systematic action in resolving specific problems (Stringer, 1999). It has three phases. The first is problems identification. In this phase, the researchers used descriptive and explorative design with cross-sectional approach, in which they identified the implementation of discharge planning.

In the second phase, the researchers together with hospital wardens developed the prototype model of discharge planning which is being organized and based on information technology system. In this phase, the slot system, computerized discharge planning documentation, course document and interactive media/CD are based on current illness cases where four learning CD model purpose would be developed.

In the third phase, the experiment of prototype model is being held in three hospital wards in Fatmawati hospital. After one month of experiment, interview was done to evaluate the quality of the prototype model and to pick up the recommendation about patient's discharge planning model. Beside that, the study to evaluate the documentation and evaluation by questionnaire is also being done (Chart 1). Pre-post test design was utilized to evaluate the DP score before and after its implementation using interactive media CD (Sastroasmoro and Ismael, 2008).

The level of knowledge and the implementation of DP were influenced by many factors. This research conducted the intervention
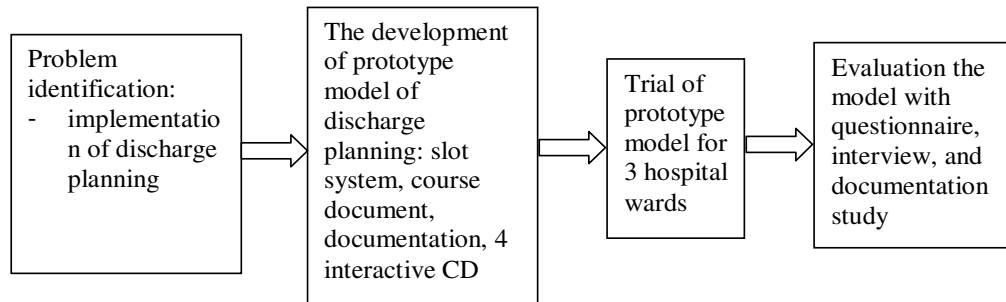
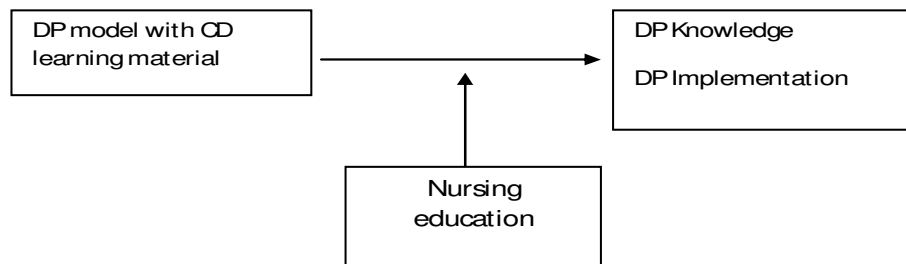**Chart 1.** The complete research's outline.

Chart 2. Research framework.

to develop the DP's model learning media CDs. The researchers also conducted trainings regarding how to implement DP. They compared the level of knowledge with the application of DP before the intervention. They also examined the confounding variables including the educational background that can affect the relationship between DP model and its knowledge and implementation (Chart 2).

Research sample

The research sample comprised all nurses in surgery, Mawar Medical Rehabilitation, Melati and Postpartum wards and Teratai in Jakarta Indonesia's hospital X. Total sample comprised 51 people. X hospital was chosen since it has implemented the hospital information system, which includes the nursing care information system, while the wards were chosen due to the type of patients' illness in those three wards which are vulnerable and need to have a continuity care at home.

Data analysis

The instrument trial was had before the real data gathering. The validity and realibility score was 0.375 - 0.89 and 0.7825 respectively. The researchers also conducted editing, coding, processing and data learning before the data analysis. Questionnaire results were processed with both statistical software (SPSS 11.5) and univariate analysis of proportion and presentation and bivariate with paired t test was used to examine it before and after implementation (Sastroasmoro and Ismael, 2008).

Ethical consideration

Full disclosure of information to respondents was done. Study subject anonymity was ensured as no names were used on the questionnaires. Respondents filled in the questionnaires in accordance to what they feel and without being forced by anyone to do otherwise. All informed consents had been approved and signed by the respondents.

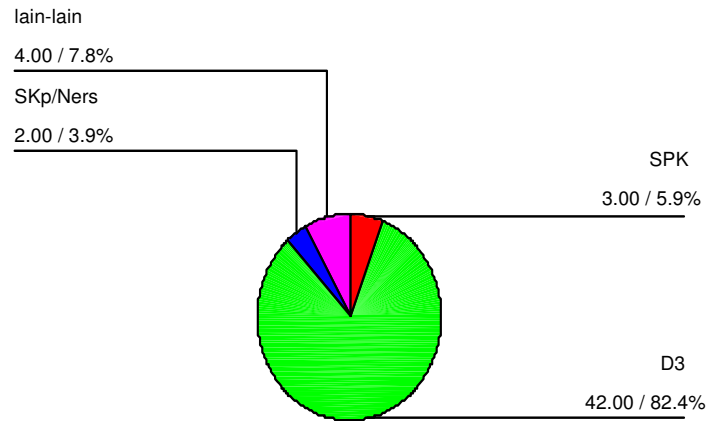## RESULTS

Univariate analysis

Problems identification, which includes the demography data about nurses in Melati, Mawar and Gynecology wards (Teratai) in X hospital, was done in the first phase.

Figure 1 showed that the education level of most nurses is Diploma (82.4%) and there are still 5.9% of nurses SPK (Sekolah Pendidikan Keperawatan) who are in the same level as senior high school and just a few who have become Bachelor/ S1 (3.9%). Figure 2 shows the distribution of respondents according to their position, in which, most of them are practitioner nurses (72.2%).
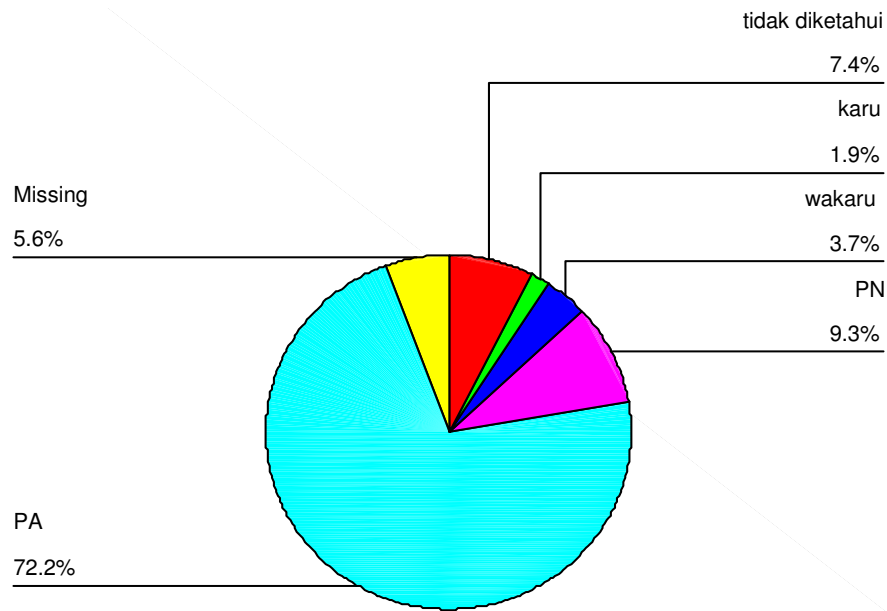
Table 1 indicated the knowledge level about discharge planning and its mean before intervention was 11.16 with standard deviation (SD) 2.1, while mean perception about DP's practical was 50.3 with SD 0.65.

Table 2 indicated the knowledge level about discharge planning and its mean after intervention was 18.11 with standard deviation (SD) 1.9, while mean perception about DP's practical was 59.31 with SD 0.48.

The DP problem was also identified by brainstorming approach. This approach explored the common existing problem in the nursing ward and the continuous care after patient's discharge. It was also used to set up

lain-lain
4.00 / 7.8%

SKp/Ners
2.00 / 3.9%

SPK
3.00 / 5.9%

D3
42.00 / 82.4%

Figure 1. Respondent distribution based on education (n=51).

tidak diketahui
7.4%

karu
1.9%

wakaru
3.7%

PN
9.3%

Missing
5.6%

PA
72.2%

Figure 2. Respondent distribution based on their position (n=51).

Table 1. Respondent distribution based on knowledge about discharge and perception about practical of DP before intervention.

Variable	Mean	SD	SE
Knowledge pre	11.16	2.1	0.33
Practical pre	50.3	4.27	0.65

Table 2. Respondent distribution based on knowledge about discharge and perception about practical of DP after intervention.

Variable	Mean	SD	SE
Knowledge post	16.81	1.9	0.65
Practical Post	59.32	3.15	0.48

Table 3. Correlation between level of education and perception about discharge planning before and after being introduced with model of discharge planning.

Variable Education level	Mean	SD	95% CI	p value
Before				
SPK	52	6.5	3.8	
Diploma	50.19	4.3	0.68	
S1/Ners	44.5	12	8.5	
Others	49.75	1.7	0.85	
After				
SPK	57	3.6	2.08	0.27
Diploma	59.19	3.16	0.53	
S1/Ners	62.00	.	.	
Others	6125	1.2	0.63	

Table 4. The influence of model of discharge planning with mean of nurses' knowledge about DP.

Variable Knowledge	Mean	SD	CI 95%	p value
Pre	11.16	2.1	-6.61S/d -4.67	0.00
Post	16.81	1.9		

standard operating procedure (SOP) of DP's impelementation in the ward. Four major nursing problems identified from the brainstorming approach were: risk for wound expansion, pain, mobilization and urinary incontinence. The CD material was developed according to these four nursing problems.

Discharge planning slot starts from the patient coming to the hospital and then the complete assessment of bio, psycho, social and spiritual aspect was being held, to include the need for health education and discharge planning process. After the assessment process, the nursing diagnosis which includes those related to the need for health education is being determined. After that, there is intervention and implementation of health education according to the course document that has being developed before. The DP was implemented using CD learning material. After implementing the health education, the nursing evaluation and documentation was carried out (Chart 3).

Bivariate analysis

1. Correlation between level of education and perception about the implementation of discharge planning.

Table 3 showed that there was no correlation between the level of education and perception about the implementation of discharge planning, both before and after the introduction of discharge planning model which was being organized and planned. The quantity level of those who considered that the implementation of discharge planning was below standard are those who have bachelor's degree level, still, most of them consi-dered that it was good after the program.

2. The influence of discharge planning model with the mean of nurses' knowledge about DP.

Table 4 illustrated that the mean of nurses' knowledge about discharge planning after the program was better (16.81) with SD (1.9) and then before the program (11.16), SD = 2.1. p value was 0.00, thus it can be con-cluded that there is an impact of implementing the DP's model with information technology media to increase the nurses' knowledge about DP.

3. The influence of discharge planning model with the mean of nurses' perception about DP

Table 5 illustrated that mean of nurses' perception about the implementation of discharge planning after the program is better (59.32) with SD (3.15) and then before the program (50.30), SD = 4.27. p value is 0.00, thus it can be concluded that there is an influence from imple-menting the discharge planning model with information

Table 5. The influence of model of discharge planning with mean of nurses' perception about the implementation /practical pf DP.

Variable The implementation of discharge planning	Mean	SD	CI95%	p value
Pre	50.30	4.27	-10,69sd-7,35	0.000
Post	59.32	3.15		

technology media to increase the implementation of DP.

Interview analysis

Interview was being held to know and evaluate the implimentation of discharge planning model with organized slot based on IT media. The semi-structured interview was carried out on head of ward, primary nurse representative, nursing practitioners, patients and families. The researchers used interview guidance instrument and recorder device. The interview result showed that CD learning media has been utilized recently for DP of 62 patients and family during one month. It was concluded that the IT based discharge planning media was very helpful for nurses in implementing the education to patients and families in order for discharge planning to work. This media also help patients and families in understanding the discharge planning.

There is still this problem of nurses not assisting completely when doing discharge planning because of the other duty. The other problem is when making the course document. Not all kind of educations need course document, but it is enough if the ward already has a course document which can be a guide for all nurses in giving the educations to patients and family.

There is also a problem of technicality, which includes the quality of learning media after being used for some time. This reduces the performance, thus the quality of learning media need to be increased. Beside that, the other learning media used to educate patients and families need to be developed.

DISCUSSION

Action research is a process of identifying and conducting solutions to overcome a problem (Fisher et al., 1998). This method is suitable in answering the DP problem which is not optimally carried over in Indonesia. The data's triangulation approach explored the problem in a deeper manner (Streubert and Carpenter, 1999). This study combined both quantitative and qualitative methods for exploring the common nursing process and setting the SOP of DP.

Nurses must do discharge planning in order to prepare the patient and family to return home after being hospitalized. Discharge planning should be structured, starting from the moment when the patient first come to the hospital up to the time he/she returns home. The results of this study indicated that there is a correlation between the implementation of DP model (which based on information technology media) and nurses' knowledge about DP (p = 0.000). Also, a correlation exists between the implementation of DP model (which based on information technology media) and the increasing number in the implementation of DP by nurses. The interview and observation showed that discharge planning which based on information technology helps both patient and family and also nurses. This result was in line with the previous research which stipulates that DP improved the discharge adaptation and stress-coping ability (Hariyati, 2004).

Discharge planning media (CD) is a good device in implementing the discharge planning. Learning media (CD) simplified the patient and nurse in implementing the discharge planning. According to the previous theory, the implementation of discharge planning should be a mechanism to give continuity care, information about the continuity health need at home, evaluation arrangement and personal care instruction (Swansburg, 1999). Discharge planning is a professional health care process for patient and family that also included the interaction between multidisciplinary. Planning should focus on patient problems, which include the act of prevention, therapeutic, rehabilitation and general care to include non-medical needs. Discharge planning should focus on the process that is preparing the patient to leave the health facility/ hospital.

CONCLUSION AND RECOMMENDATION

Conclusion

This study concluded that discharge planning helped patient and family to return home. By implementing the organized discharge planning, focus is placed on course document and discharge planning. Patient and family are being helped by the learning media of discharge planning. It also helped the nurse in giving education to patient. This study also concluded that there is an impact of implementing discharge planning based on learning media (CD) to increase the nurses' knowledge and also have other impacts in its implementation.

Recommendation

1. Implementation of discharge planning must be done by nurses to help prepare the patient and family to return home. There is the need also for it to be monitored and supervised by the nursing manager so that its implementation could be run smoothly.
2. The learning media's (CD) quality need to be improved and its topic need to be added.
3. There should be further research about the continuity of discharge planning in home care and other health services.

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