The Effect of Application of Discharge Planning Seci Model on The Completeness of Discharge Planning Documentation for Tuberculosis

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ABSTRACT

Background: The implementation of discharge planning must be documented completely. Preliminary study found that 90% of discharge planning implementation is not documented. The weakness of the intervention that has been done by previous researchers is that it does not focus on increasing the completeness of documentation, especially on the documentation of discharge planning, the application of discharge planning based on knowledge management SECI model as an intervention applied to improve the completeness of documentation on discharge planning. Objectives: The purpose of this study was to determine the effect of discharge planning based on knowledge management SECI model on the completeness of documentation of discharge planning for tuberculosis. Methods: This research is quantitative research with quasi-experimental approach with post-test only design with nonequivalent control group. The number of samples was 34 medical records with a diagnosis of pulmonary TB, each of which consisted of 17 samples in the control group and 17 samples in the intervention group. The intervention in this research is the implementation of discharge planning based on knowledge management SECI model. The data were taken using the discharge planning SECI model observation sheet and the documentation completeness observation sheet which had been tested by expert and analyzed using the Mann-Whitney test. Results: The results showed p value is 0.000 < 0.05. Conclusion: Application of discharge planning based on knowledge management SECI model has a significant effect on the completeness of documentation of discharge planning for tuberculosis (TB). Nurses must become to manage knowledge, good time management, and be a role model in providing nursing care.

Keywords: discharge planning; documentation completeness; SECI model.
INTRODUCTION

Nursing services must prioritize the needs of patients. The needs of patients in the process of nursing care carried out by nurses, namely the implementation of discharge planning. Discharge planning is the main function and an important part of the patient nursing program that must be carried out by nurses. It is dynamic and systematic which begins immediately after the patient enters the hospital, starting with identification, assessment, goal setting, planning, implementation, evaluation and coordination carried out to provide easy supervision of health services and social services before and after discharge (Gonçalves-Bradley et al., 2022).

Implementation of discharge planning at the hospital has not been optimally implemented. It is only in the form of resume records of patients returning home and information on control schedules which are briefly carried out when the patient is about to go home (Agustin, 2017a). In addition, Abdul-Kareem, Lindo and Stennett (2019) research that nurses rarely start discharge planning within the first 24 hours of admission in proven because only 6,9% of documented evidence of discharge planning implementation.

Factors that support an increase in patient knowledge related to their illness is through the knowledge applied by nurses in carrying out discharge planning. Rahimi's Knowledge management is very important to apply in creating innovation (Rahimi et al., 2017). Knowledge management is a system developed by Nonaka and Takeuchi as a strategy or technique for maintaining, analyzing, organizing, improving, sharing understanding and experience. Then, Nonaka and Takeuchi proposed a knowledge creation process model called the SECI (Socialization, Externalization, Combination, Internalization) model which is the result of conversion of tacit and explicit knowledge. SECI model is a conceptual model that is needed to increase the knowledge based (Darudiato and Setiawan, 2013; Jonsson, 2015; Juddrip, 2015).

Ratna explained that the factors influence the implementation of discharge planning are the lack of motivation and compliance of nurses, inefficient time management and planning in carrying out discharge planning due to non-optimal documentation of discharge planning (Agustin, 2017a). Implementation of discharge planning must be documented in
addition to being one of the responsibilities of the nursing profession but also as authentic evidence in professional nursing care management and an important component for patient safety when presenting information clearly so that it becomes an accurate and reliable source of information (Mabire et al., 2015; Nursalam, 2015).

The current phenomenon, documentation has not been optimally carried out by nurses. Lindo’s research on the study of nursing documentation in primary health care revealed incomplete nursing records, such as lack of nursing assessments, nursing diagnoses, and outcomes of nursing actions (Kamil, Rachmah and Wardani, 2018; Abdul-Kareem, Lindo and Stennett, 2019). This research is in line with Tornvall’s research that 13% of clinical management in nursing is related to documentation errors (Stop TB Partnership, 2015; Bijani M et al., 2016). The preliminary study found that ± 90% of the implementation of discharge planning was not documented and the results of interviews with five nurses in internal medicine wards indicated that the implementation of discharge planning was not fully documented due to the busyness of the rooms.

Completeness of discharge planning documentation is part of the quality of service at the hospital. The impact of incomplete discharge planning documentation is that it hinders the understanding of other health professionals in providing health services, besides that it has an impact on communication failures between health service providers thereby affecting way of reporting, quality of care, and patient safety (Rahayu, Hartiti and Rofi‘i, 2017; Tuinman et al., 2017; Tage, Noviestari Enie and Suhendri Ade, 2018). The intervention that has been carried out by previous researchers is the ideal discharge planning intervention, coaching, supervision, documentation training, on nursing care documentation but does not focus on improving the completeness of documentation, especially on discharge planning documentation (Rahayu, Hartiti and Rofi‘i, 2017; Rahmawati, 2017; Raihany, 2017; Rezkiki and Ilfa, 2018). The researcher uses the SECI knowledge management-based discharge planning model as an intervention that is applied to increase the completeness of the documentation on discharge planning.

Discharge planning based on the SECI knowledge management model is applied by nurses to patients with TB disease because TB disease is an infectious disease (Jonsson, 2015; Agustin, 2017). Requires
long and continuous care so it really needs education, especially in providing nursing care through the application of discharge planning (Candra Dewi Rahayu, Tri Hartiti and Muhammad Rofi‘i, 2017). This model facilitated health service to prevent drug discontinuation which it can lead to drug resistance and the level of readiness of patients and families for discharge (Abdul-Kareem, Lindo and Stennett, 2019).

Objective(s): The aim of the study was to determine the effect of discharge planning based on the SECI knowledge management model on the completeness of discharge planning collection of tuberculosis.

METHODS

Study Design

This study used a quasi-experimental research design with a posttest-only design with nonequivalent control group.

Setting

This study was conducted from February to May 2021 in the internal medicine inpatient room at Salatiga Hospital as the intervention group and the internal medicine inpatient room at Dr. R. Soedjati Grobogan as the control group.

Research Subject

The population in this study is all medical records of TB patients in internal medicine inpatient rooms in 2021. While the sample in this study was the medical records of TB patients in internal medicine inpatient rooms which were determined based on inclusion criteria. The inclusion criteria in this study were documentation of inpatient medical records with a medical diagnosis of TB in both the intervention group and the control group from the internal medicine ward.

Sampling used non-probability sampling technique, type of consecutive sampling. The reason the researcher used consecutive sampling was to fulfill the required number of samples within the time period determined by the researcher.

The sample size in this study was taken from the population based on the number of medical records of patients diagnosed with tuberculosis who were treated in internal medicine inpatient rooms. Calculation of the research sample using the method of power size and effect size based on Kappa Kohen. The sample in this study consisted of 34 medical records divided into 17 medical records in the control group and 17 medical records in the intervention group.

Instruments

The instrument used by the researcher used by the searcher was developed from the Indonesia Ministry of Health regarding
the evaluation instrument for the implementation of standard nursing care in hospitals and the NCSS (National Council of Social Service) which then being modified by the researcher.

This observation sheet consists of two answer choices, 1 if it is complete, and 2 if it is incomplete. The following is a grid of observation sheets for the completeness of the documentation for TB discharge planning, that is completeness of nursing assessment 4 item, completeness of diagnoses related to discharge planning 5 items, completeness of intervention 6 items, completeness of implementing 6 items, and the last completeness of evaluation 6 items. The instrument validity was tested based on expert opinion (judgment validity) using the index of content validity. The index of content validity is carried out by calculating the presentation of items considered relevant by expert, then taking the average presentation value among experts as the index value. The index value is referred to as the average congruent percentage (ACP). It is recommended that the ACP value is greater than 90 as a condition for receiving an instrument.

Reliability test of the observation sheet documentation carried out with the interrater reliability test is a type of test used to equate perceptions between researchers and enumerators. The tool used to test the interrater reliability is the Kappa Kohen Statistical Test. The results of the Kappa Kohen statistical test between the researcher were p value 0.001 < 0.05, which means that the perceptions between the researcher and the enumerator are the same so that the observation checklist sheet is valid and can be used in this research.

**Intervention**

The intervention group was given training on discharge planning based on the SECI knowledge management model, while the control group used discharge planning according to room standards (no treatment was given).

Implementation training based on discharge planning SECI model knowledge management goes through three stages, as follows:

1. Training on implementing debit planning based on SECI management knowledge model. Implementation of training in the intervention group, trained by experts in the field of discharge planning and documentation of nursing care. Discharge Planning training was carried out for 2 days for all class III inpatient nurses.
2. Assistance in implementing the SECI discharge planning model. Assistance is provided for 5 days after the training is carried out and is carried out while patients diagnosed with pulmonary TB are being treated in the third’s class internal medicine inpatient ward.

3. Implement the SECI Discharge Planning Model independently. Implementation of discharge planning SECI model is applied independently by the nurse after the process assistance is complete and continues until data collection is complete.

The completeness of the discharge planning documentation is assessed using an observation sheet for the completeness of the documentation that has been subjected to an expert test.

**Data Analysis**

Data was analyzed used SPSS. Data analysis carried out in this study was a normality test, homogeneity test, univariate analysis, and bivariate analysis.

On the variable discharge planning SECI model in the control group \( p = 0.008 \) and the intervention group \( p = 0.010 \) which indicates the distribution of data is not normally distributed. Then, for the variable completeness of discharge planning documentation in the control group, the value of \( p = 0.000 \) and the intervention group, the value of \( p = 0.016 \) indicates that the distribution of data is not normally distributed.

The reliability test showed that the characteristic of nurse (age, sex, education, and years of service) between the control group and the intervention group produced a significance value of \( p > 0.05 \).

The univariate analysis in this study was the characteristic of the nurses (age, sex, education and years of service), completeness of TB discharge planning documentation in the control group and completeness of TB discharge planning documentation in the intervention group. Univariate analysis for the completeness of discharge planning documentation in the form of a frequency distribution with the categories of poor \((<55\%)\), good enough \((55-64\%)\), good \((65-75\%)\) and very good \((76-100\%)\). Bivariate analysis used a non-parametric test is Mann Whitney test because the data were not normally distributed.

**Ethical Consideration**

This research has received ethical permission from the Health Ethics Committee with the ethical clearance number 80EC/KEPK/2020. In addition, it
has passed the research ethics test at the research site. Each type of variable is analyzed using frequency and percentage. Nurse characteristic data according to demographic data can be explained as follows:

Table 1. Distribution of the frequency and percentage of nurse characteristics in the control group and the intervention group February – May 2021

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>Control</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 24 – 34 years</td>
<td>7</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>b. &gt; 34 years</td>
<td>10</td>
<td>59</td>
</tr>
<tr>
<td>2</td>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Woman</td>
<td>16</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>b. Man</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Las education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Diploma nursing &amp; Ners</td>
<td>12</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>b. Bachelor of nursing</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>4</td>
<td>Years of services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 1 – 10 years</td>
<td>8</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>b. 11 – 20 years</td>
<td>9</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>c. 21 – 30 years</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>d. &gt; 31 years</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

it is known that the results of the age characteristics of nurses in the control group and the intervention group were mostly in the age range of more than 34 years, namely 59% in the control group and as much as 65% in the intervention group. Respondents with characteristics based on sex in both the control group and the intervention group were dominated by female sex, namely 94% in the control group and 76% in the intervention group. Respondents in the control group and the intervention group had an education level that was dominated at the D3 level of Nursing, namely 71% in the control group and 76% in the intervention group, while for the S1 level of Nursing in the control group 29% and 24% in the intervention group. Then, the working period of respondents in the control group was only in the range of 1-10 years with a percentage value of 47% and 11-20 years, namely 53%, while the working period of respondents in the intervention group, namely 1-10 years, was 18%, 11-20 years amounting to 65%, 21 – 30 years amounting to 12%, and over 31 years only 6%.
Completeness of documentation of discharge planning for TB disease in the control group

Completeness of discharge planning documentation in the medical records of patients with pulmonary TB disease in the control group at RSUD Dr. R. Soedjadi Purwodadi. Data is presented in the form of percentage values, minimum maximum values, mean (average) values, and standard deviation.

Table 2. Completeness of discharge planning documentation in medical records of TB patients based on observations in the control group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n (%)</th>
<th>Min-Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete discharge planning documentation</td>
<td>Not enough</td>
<td>17 (100)</td>
<td>2-4</td>
<td>3.11</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>Enough</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very good</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Completeness of discharge planning documentation in the medical records of patients with TB disease in the control group, namely the group that was not given intervention or treatment, showed an average value of 3.11 with a minimum value of 2.00 and a maximum value of 4.00. Completeness of discharge planning documentation in the control group is included in the poor category because the score obtained is based on the results of observations, namely less than 50%.

Completeness of documentation of discharge planning for TB disease in the intervention group with the application of the SECI discharge planning model

Completeness of discharge planning documentation in the medical records of patients with pulmonary TB in the intervention group at Salatiga Regional Hospital. Data is presented in the form of percentage values, minimum maximum values, mean (average) values, and standard deviation.

Table 3. Completeness of discharge planning documentation in the medical records of TB patients based on observations in the intervention group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n (%)</th>
<th>Min-Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete discharge planning documentation</td>
<td>Not enough</td>
<td>14 (82%)</td>
<td>7-17</td>
<td>10.29</td>
<td>2.56</td>
</tr>
<tr>
<td></td>
<td>Enough</td>
<td>2 (12%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>1 (6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very good</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The effect of implementing the SECI model discharge planning on the completeness of discharge planning documentation for TB disease

The analysis carried out to determine the influence of implementing the SECI discharge planning model on the completeness of discharge planning documentation for TB disease was carried out by bivariate analysis.

Table 4. Test of differences in completeness of TB discharge planning documentation in the control group at RSUD Dr. R. Soedjati Purwodadi and the intervention group at RSUD Salatiga

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Measurement results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete discharge planning</td>
<td>Control</td>
<td>N = 17 Min - max = 3,117 Mean = 0,927 SD = 0,000</td>
</tr>
<tr>
<td>planning documentation</td>
<td>Intervention</td>
<td>17 Min - max = 10,294 Mean = 2,568</td>
</tr>
</tbody>
</table>

The results of the Mann-Whitney test for completeness of discharge planning documentation in the control group showed that the mean completeness of documentation was 3.117 < the mean completeness of documentation in the intervention group was 10.294 with a mean difference of 7.177. This difference illustrates the difference in results between the control group that was not given the SECI model discharge planning treatment and the intervention group that was given the SECI model discharge planning treatment. The significance (meaningfulness) of the difference is proven from the results of the Mann-Whitney test, namely the p value (Asymp. Sig) = 0.000 < 0.05. Based on the results of the Mann-Whitney test, it can be concluded that there is a significant difference between the control group which was not given the SECI model discharge planning treatment and the intervention group which was given the SECI model discharge planning treatment, which means that Ha is accepted, that is,
DISCUSSION

The application of knowledge management-based discharge planning based on the SECI model applied by executive nurses to TB patients in internal medicine inpatient wards found in this study along with its analysis and interpretation provides an illustration that the SECI knowledge management-based discharge planning model is a method that can improve the quality of documented documentation, marked by the completeness of discharge planning documentation.

The differences in the completeness of the discharge planning documentation in the control group and the intervention group in this study were statistically indicated by the average results between the control group, which was not given treatment, and the intervention group. The group that was given treatment using the SECI discharge planning model, which had a mean difference in completeness of 7.17 and p value = 0.000 so that this difference is significant with p value <0.05. These results become the basis for answering the research hypothesis and drawing conclusions that the application of SECI knowledge management-based discharge planning model has a positive and significant effect on improving the completeness of discharge planning documentation.

This increase in the completeness of discharge planning documentation is because in the application of knowledge management-based discharge planning there are four models that must be applied by nurses in carrying out discharge planning, namely socialization where on this indicator nurses provide health education in the form of nursing implementation to patients and families based on the plan. Nursing that has been determined according to the discharge planning diagnosis obtained from the results of the assessment according to the patient's needs. Providing discharge planning to patients and families must be in accordance with the patient's needs obtained through the assessment (Ahsan et al., 2019; Søndergaard et al., 2019).

The nurse externalization stage applies and documents the education that has been carried out for patients and families. So that the externalization stage includes the completeness of discharge planning documentation on implementation indicators. The combination stage, in
which the nurse re-evaluates the education given to the patient and family. The combination phase includes the completeness of discharge planning documentation on response or evaluation indicators. Then at the internalization stage, namely the nurse has innovation or new ideas in providing discharge planning to patients so that at this stage it includes indicators of intervention or re-planning in accordance with the education needed by the patient. The implementation of the application of discharge planning must be structured so that it is closely related to the nursing process in carrying out documentation (Sakai et al., 2016; Almuayqil, Atkins and Sharp, 2017).

This research is in line with Setyoadi’s research, that the application of knowledge management has a significant effect on the completeness of nursing care documentation (Ahsan and Setyoadi, 2019). The application of knowledge management-based discharge planning based on the SECI model, this research is in line with research conducted by Saleh Almuayqil et al, which concluded that the application of the SECI model provides best practices for nurses and increases effectiveness in providing health education (Bijani M et al., 2016).

Raihany in his research explained that the documentation of discharge planning implementation can be used as an indicator of the quality of nursing care and reflects the quality of care provided by nurses (Raihany, 2017). Nurses are very important to sit down to discuss spending time with patients or families and be patient to identify the needs of patients and families to agree on a treatment plan (Rahayu, Hartiti and Rofi’i, 2017).

Providing discharge planning does not only rely on knowledge possessed from academics, but also must be continuously updated through experience gained while providing nursing care. Therefore, through knowledge management base nurses can manage all obstacles, such as incomplete documentation of discharge planning with limited time to improve nurse performance and quality of nursing care.

CONCLUSION
The application of knowledge management-based discharge planning based on the SECI model has a significant effect on the completeness of discharge planning documentation for tuberculosis (TB) with p value = 0.000 <0.05.

SUGGESTIONS
The application of the SECI model as a result of knowledge conversion is expected
to be used as teaching material for quality improvement for nursing students in applying nursing practice, especially for the concentration of Nursing Leadership and Management which has outputs as leaders, educators, and role models. For future researchers, further development is needed regarding the timing of the implementation of the SECI knowledge management-based discharge planning model with changes in nurse behavior, and its relation to patient satisfaction, and evaluating the length of stay and the effect of the SECI model discharge planning from a nurse's point of view.

REFERENCES


