

THE COMPLIANCE OF CLINICAL PATHWAY ON CLINICAL SUPERVISION IN DECREASING THE LENGTH OF STAY FOR PATIENTS UNDERGOING MASTECTOMY AT AN ACADEMIC HEALTH CENTRE

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Abstract

Background: The clinical pathway is a guideline to provide the coordination of services and to have the right outcome including to decrease the length of stay for patients undergoing the mastectomy procedure. At the academic health centre, the clinical pathway implementation gives challenges to medical specialists between caring for the patient and supervising the residents.

Objective: To know the difference of compliance of clinical pathway with clinical supervision in decreasing the length of stay for patients undergoing mastectomy at an academic health centre in Indonesia.

Methods: A retrospective cross-sectional study was done using medical records in 2018. Samples were chosen using a purposive sampling method. They were selected according to the inclusion and exclusion criteria (n=76). Furthermore, the compliance and the length of stay of the samples were assessed and observed.

Results: The high compliance of clinical pathway on clinical supervision (n: 30) showed a length of stay with 5.7 days on average (standard <7 days) while the low compliance group (n:46) showed a mean of length of stay with 10.3 days. The independent sample test showed that the difference between the two compliance groups to decrease the length of stay was significant (p<0.05).

Conclusion: There was a significant difference between high compliance and low compliance of clinical pathway on clinical supervision to decrease the length of stay for mastectomy patients at an academic health centre.

Keywords: Academic health centre, Clinical pathway, Clinical supervision, Length of stay, Mastectomy

Introduction

The clinical pathway can be defined as a time-based multidisciplinary approach used for helping the patient to achieve the targeted positive outcome. The hospital made a clinical pathway based on the clinical practice guideline. The systematic review showed that clinical pathway could improve the patient services, maximize the efficiency, decrease the variance, increase the documentation and certainly decrease the length of stay (1-3). It also ensured the continuity of services integrated from the health professionals during the the hospitalization period of the patient. The continuity of services is an important thing for improving patient safety. The clinical pathway has been widely used for a disease with both simple medical cases and surgical interventions such as mastectomy (1,4).

Mastectomy is a surgery to remove one or both of the breasts (5). It can be combined with a modality of other therapies such as chemotherapy and radiotherapy by seeing the disease stage and the patient's clinical condition. It is indicated for the patient with breast cancer in stage 1, stage 2 stage 3 after chemotherapy or a recurrent case (6). Breast cancer is the first rank for the cancer incidence in women. It was around 42.1 out of 100,000 women suffer from breast cancer (7).

The application of a clinical pathway for breast cancer patients undergoing mastectomy has been widely conducted at a general hospital. However, it will give a challenge for the medical specialist at an academic health centre in deciding whether to provide services to the patient or in teaching the residents (8). An academic health centre should be accredited by an authorized agency. JCI or Joint Commission International is one of the agencies that is involved in validating the standards for an academic health centre in promoting patient safety. Standards for medical professional education states that an academic health centre should understand and provide clinical supervision in a required frequency and intensity for each type and level of the residents (9). Clinical supervision is

needed to ensure that the patient's care is safe and the educational programme is a learning experience for the residents. They should also know that clinical supervision consists of the daily signature on all documents including medical records and instruction forms. Consequently, clinical supervision on medical records should be audited with the requirement and the frequency of the documentations (10-12).

The clinical pathway must be evaluated for patient safety and service quality. One of the quality indicators of clinical pathway implementation is length of stay (2-3). The indicator should be reviewed periodically to make the clinical pathway implementation at an academic health centre better and which complies with the clinical practice guideline. Thereby, this study wants to know the difference between the compliance of the clinical pathway on the clinical supervision in decreasing the length of stay for patients undergoing mastectomy at an academic health centre in Indonesia.

Methods

A retrospective cross-sectional method was used by collecting data taken from medical records. Samples were chosen using a purposive sampling method (13). They were selected according to the inclusion criteria in the clinical practice guideline. The exclusion criterion is private patients. 136 mastectomy patients' data had been collected in 2018. From them, 95 non-private patients were taken. After confirming to the medical records unit, 76 valid medical record files could be observed.

The compliance of the clinical pathway on the clinical supervision and length of stay were observed for each medical record sample. The compliance of the clinical pathway was valued by seeing the clinical supervision's presence of the medical specialist. It was proven by seeing the availability of the signature of verification on the medical record form. The clinical supervision was observed for five medical record forms using six valuations. The five valuations could be done by observing the

presence of a medical specialist or the verification on each medical record form named in the initial assessment, plan of care, integrated care, operating theatre report and discharge summary. Another valuation could be done by seeing the availability of a note written on the integrated care form describing that the patient's condition had been discussed in the medical specialist forum. The last valuation is called the discussion activity. The compliance of the clinical pathway on the clinical supervision is divided into two groups. They are the high compliance and low compliance groups respectively. High compliance occurs if there were four or more clinical supervisions stated on the medical record form. In contrast, it will be low compliance if there were three clinical supervisions only or less on the medical record form. Moreover, the length of stay was done by finding out the total days between the discharge and the admission dates.

The two groups were compared to the mean of length of stay using the independent sample t-test. All analyses were conducted using the IBM SPSS or Windows version 23.0.

Ethical approval

The study was reviewed and accepted by Ethical Committee in Health Research - Dr Soetomo General Hospital, No. 1287/KEPK/VII/2019.

Results

Table 1 shows the frequency of the clinical supervisions valued on the medical record. No medical record had a score of 100%. The clinical supervision in the discharge summary had the highest percentage. Meanwhile, samples with a low score in the clinical supervision were the discussion activity and the integrated care forms.

Table 1: The Frequency of Clinical Supervision on Medical Record Forms

Valuation	Yes		No	
	n	%	n	%
Initial assessment form	65	85.5	11	14.5
Plan of care form	39	51.3	37	48.7
Integrated care form	26	34.2	50	65.8
Discussion activity	18	23.7	58	76.3
Operating theatre report form	45	59.2	31	40.8
Discharge summary form	72	94.7	4	5.3

Whilst, Table 2 shows the sample distribution and the parameter of the length of stay. Only a third of the samples had a length of stay of less than seven days while samples with a length of stay of seven days or more for the rest.

Table 2: The Distribution of the Length of Stay

Length of Stay	Sample	
	n	%
Less than 7 days	28	36.8
7 days or more	48	63.2

In Table 3, it can be inferred that less than a half of the samples have a high compliance. It had an average length of stay of 5.7 days. Meanwhile, the sample with a low compliance had an average length of stay of 10.3 days. From those two groups, the data were compared using an independent sample t-test. It can be seen in Table 4 that the significance value is 0.00. This value indicates that $p < 0.05$ means that there is a significant difference between the two groups. The mean difference of -4.68116 shows that the mean of the length of stay in the high compliance is lower than the low compliance.

Table 3: Group statistics

Compliance	Group Statistics			
	N (%)	Mean	Std. Deviation	Std. Error Mean
High Compliance	30 (39.5)	5.6667	2.33907	.42705
Low Compliance	46 (60.5)	10.3478	3.95653	.58336

Table 4: The Independent Sample t-test

	Independent Sample Test			
	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	-5.841	74	.000	-4.68116
Equal variances not assumed	-6.475	73.431	.000	-4.68116

Discussion

Table 1 shows the frequency of clinical supervision as a part of the clinical pathway compliance. At the initial assessment, 85.5% of the samples had clinical supervision. The initial assessment form is a medical record file filled out by the doctor. It is useful for recording the process since pre-hospitalization to the early admission period in the hospital. This form was used for evaluating the patient data both subjectively and objectively for decision making related to the patient's health, need for care, intervention and evaluation (14). For the patients undergoing mastectomy, the

medical specialist was responsible for completing or verifying the resident's activity on the initial assessment form for less than 24 hours. It was aimed in figuring out the current condition of the patient. The patient should not wait for a long time or more than a day to receive a medical examination from the doctor. Thereby, a rapid initial assessment can decrease the length of stay.

The balance score of the clinical supervision was stated on the plan of care form valuation. There was a clinical supervision activity in 51.3% of samples and the rest had no evidence for supervision by the medical specialist to the residents or the written note on the medical record. The plan of care form is used by the doctor to record the plan of care until the discharge planning for the patient. This form is made according to the finding towards the clinical condition written on the initial assessment form. The doctor plans the care such as the surgical preparation, consultation with another medical specialist if necessary, the laboratory examination and the decision for a surgery date (14). Thereby, the patient will receive an explanation about the plan of service from the beginning and it is summarized on the plan of care form. The clear plan of care form will contribute to diminish the service variation and to decrease the length of stay (11). This form with the initial assessment form becomes the important initial checklists in the clinical pathway algorithm (15).

Furthermore, the valuation about the clinical supervision is integrated in the care form. This form gives information about the progress of the patient's condition that is written and signed by the doctor and other healthcare professionals. The patient's progress should be written daily during the treatment. The time, date and the type of intervention should be recorded and signed by the doctor (14). Even though the content of this form was mostly filled out by the residents, the medical specialist was responsible for reading the patient's record and verifying it daily as a part of the clinical supervision at an academic health centre (16). In Table 1, it was found

that only a third of the samples had the clinical supervision in this form that was 34.2%. The rest or 65.8% had no evidence of the the availability of the clinical supervision. The data showed that the clinical supervision was low on this important form. Even though the resident visits the healthcare every day, there is no daily visits or verification by the medical specialist. The daily condition experienced by the patient before and after the mastectomy could not be observed by the medical specialist. This situation potentially elicited the clinical variations that could extend the length of stay (11).

The similar condition also occurred in the discussion activity valuation. This activity is a part of the services where the patient's data displayed by the residents to the medical specialists. The discussion activity is an educational process where the two-way learning and teaching process between the residents and the medical specialist takes place. In this part, the patient's condition and the most important planning called the surgery date was scheduled. By the existence of the surgery date, more than half of the whole steps in the clinical pathway had been fulfilled and it indicated a high compliance of the clinical pathway. Unfortunately, only 23.7% of the samples had evidence for the availability of the discussion activity. Lacking of the discussion activity recorded on the integrated care form would certainly increase the length of stay, especially the period between the admission date and the surgery date (16,17).

The next valuation is the clinical supervision of the medical specialist in the surgery room. It was done by observing the availability of the signature or verification on the operating theatre report. From this valuation, 59.2 % of the samples had evidence for the availability of the clinical supervision. This showed that more than half of all the samples had the clinical supervision process when the mastectomy intervention was being conducted. The assistance from the medical specialist to the resident when the surgery was performed would certainly provide the concern from the medical specialist to the patient (17). Thereby,

the medical specialist could know the patient's clinical condition after the surgical intervention. The post-surgical care could be done by the residents and still must be daily supervised by the medical specialist (18). The remaining samples (40.8%) with no clinical supervision in the operating theatre could become the burden for the compliance of the clinical pathway. The mastectomy intervention became the peak activity that should be obeyed by the medical specialist. Their absence in the surgery room would decrease the supervision process of the residents. Consequently, the obligation for caring of the patient decreased and it could extend the patient's length of stay especially for the post-surgical intervention (19,20).

Ultimately, the valuation was done on the discharge summary form. It contains a brief explanation about the important information of the patient's disease, the intervention done during the treatment and the patient's follow-up care written right before the patient's discharge date (14,21). Since the copy of the patient's discharge summary form should be brought by the patient, this form should be completed immediately by the resident and the medical specialist. The procrastination in completing the discharge summary form will postpone the patient's discharge and it will extend the patient's length of stay. On the other hand, if the patient wants to go home, then the discharge summary is completed immediately it can decrease the length of stay (11). In this parameter, the relevant data of 94.7% discharge summaries from the samples were obtained that had been completed by the resident and the medical specialist.

Overall, as seen in Table 2, the distribution of the patient's length of stay in this study shows that 63.2% of the samples had a length of stay of mostly around 7 days or more. This indicates that the implementation of the clinical pathway did not comply with the clinical practice guideline which states that the length of stay for patients undergoing mastectomy must be less than 7 days (15). Some of the factors for this are low supervision from the medical specialist towards the

resident activities and the discussion activity between the medical specialist and the resident that is not monitored in the treatment process of the patient.

Furthermore, out of the six valuation parameters, the compliance of each sample is valued according to the measurement method. The high compliance of the clinical pathway on the clinical supervision during 2018 was only 39.5%. This shows that the clinical supervision by the medical specialist did not support the compliance of the clinical pathway towards the patient undergoing the mastectomy intervention. In contrast, the low clinical supervision of the clinical pathway on the clinical supervision dominated with a range of 60.5%. Lack of oncologists, the high number of residents and the tight academic curriculum made the clinical supervision activities recorded on the medical record to be disturbed by some activities such as the teaching activity, research bustle or other non-service duties in the hospital (8). Nevertheless, the patient who complied with the clinical supervision had an average length of stay of 5.6 days. It proved that the clinical supervision recorded on the medical record can make it relevant to the clinical practice guideline that is less than 7 days. The existence of the residents at an academic health centre would influence the length of stay as one of the outputs of the clinical pathway if the clinical supervision was conducted well (17). At the academic health centre, clinical supervision by the medical specialist to the residents must be organized and the existence is absolute (9). On the other hand, a low compliance can make the average length of stay to be extended to be more than seven days (10.3 days).

In the last stage of this study, the impact towards the length of stay of the two groups was analyzed using the independent sample t-test. As seen in Table 4, the two-tailed significance value (t-tailed) is 0.000. This value means that $p < 0.05$ indicates a significant difference between the high compliance and the low compliance of the clinical pathway on the clinical supervision in decreasing the length of stay. This difference becomes clear by

looking at the data presented in Table 3. It shows the difference in the length of stay between both the groups.

Limitation

This research is based on the data collection from the medical records of the patients. However, the disobedience of the medical specialists and residents in filling out the medical record forms can lead to an inaccurate recall. Other factors affected also may not be measured. This is a general issue when a retrospective design is performed. While the retrospective study needs very large sample sizes, this study only had a little data of patient records. Some of them were not found due to the deficient storage in keeping the files at the medical record unit. Furthermore, the study measurements about compliance needs to be improved based on the standardized assessments. Finally, this study was managed at a single centre hospital only and did not have any external validator. It seems important to update the study by inviting other academic hospitals to reduce this limitation in the generalization of the results from this study.

Conclusion

There is a significant difference between the high compliance and the low compliance of the clinical pathway on the clinical supervision in decreasing the length of stay for patients undergoing mastectomy at an academic health centre. It has been shown that patients with a high compliance of the clinical pathway on the clinical supervision had a length of stay of less than seven days in accordance with the clinical practice guideline.

Recommendation

From this study, it can be found that the attempt to decrease the length of stay for patients undergoing mastectomy to appropriate with the clinical practice guideline at an academic health centre can be done by improving the compliance with the clinical pathway. This compliance can be improved by conducting the clinical supervision from the medical specialist to the residents in the initial assessment form, plan of care form, integrated

care form, operating theatre report form, discharge summary form and the presence of the discussion activity that is written in the medical record form.

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