Factors Associated with the Completeness of Inpatient Medical Record Filling in Dr. R Sosodoro Djatikoesoemo, Bojonegoro, East Java

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ABSTRACT

Background: Medical records are central to all patient healthcare activities. Fundamentally, they form part of a doctor's ethical and statutory duty in providing good patient care.Good quality medical records, including completeness of record filling, are essential to proper ongoing care of the patient and are paramount for effective communication between healthcare professionals and their patients. However, studies in Indonesia examining factors associated with the completeness of inpatient medical record filling is scanty. The purpose of this study was to examine factors associated with the completeness of inpatient medical record filling in a district hospital.

Subjects and Method: This was a quantitative study using a cross-sectional design, conducted at Dr. R. Sosodoro Djatikoesomo Bojonegoro hospital, East Java, in April 2018. A total of 213 nurses working at the inpatient service ward was selected for this study by proportional random sampling, composing of 115 nurses with graduate degree and 35 nurses with diploma degree. The dependent variable was completeness of inpatient medical record filling. The independent variables were education level, employment status, tenure, responsibility, and organization support. The data were collected by questionnaire and document review. The data were analyzed by a multiple logistic regression.

Results: Completeness of inpatient medical record fillingwas positively associated with higher education (OR= 2.94; CI 95%= 1.08 to 8.00; p= 0.034), civil servant status of employment (OR= 4.01; CI 95%= 1.71 to 9.40; p=0.001), ≥3 year tenure (OR= 8.84; CI 95%= 2.78 to 28.16; p<0.001), higher knowledge (OR= 5.37; CI 95%= 1.40 to 20.55; p=0.014), stronger responsibility (OR= 3.13; CI 95%= 1.35 to 7.28; p=0.008), and stronger organizational support (OR= 4.08; CI 95%= 1.72 to 9.67; p=0.001).

Conclusion: Completeness of inpatient medical record fillingis positively associated with higher education, civil servant status of employment, ≥3 year tenure, higher knowledge, stronger responsibility, and stronger organizational support.

Keywords: completeness, inpatient, medical record, filling

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BACKGROUND

Hospitals are the means of health care providers to the community which should be able to serve and meet the needs of the community. The increase of public awareness of the quality of health services causes hospitals to be able to provide services and maintain the quality of health services to patients. Good health care and quality cannot be separated from the role of medical and non medical personnel, including nurse. Nurses are in demand to provide health services in accordance with the standard of care of nursing and to record all of that in the medical record. Medical records have an important role to support quality

and efficient care, incomplete documentation often occurs in many hospitals (Ufitinema et al., 2016).

Based on data from Setz and D'Innocenzo (2009) study conducted at the university hospital in SaoPaulo Brazil, the completeness of nursing documentation is 73.4% while 26.6% of it is incomplete. Ufitinema et al. (2016) study which was conducted in Rwanda-Africa hospital showed that the completeness of nursing documentation documentation reached 67% while 33% of it was incomplete. In addition, preliminary studies that have been done in Dr. R. Sosodoro Djatikoesoemo Bojonegoro hospital showed that medical record completeness on nursing care documentation inpatient in July and August 2017, the completeness rate still reached 75% and the rest 25% was still incomplete. This is in contrast to the regulation of the ministry of health No. 129 / MENKES / SK / II / 2008 on minimum hospital service standards, stating that completeness of medical record 24 hours after completion of service (with 100% complete or 0% incomplete).

Complete nursing care documenttation has some benefits in various aspects, such as legal aspects, quality assurance, communication, finance, education, research and accreditation (Nursalam, 2007). In addition, according to Jefferies et al, (2010) nursing care documentation is important because it defines the nature of nursing itself by documenting patient care outcomes.

The qualified nursing care will provide a sense of security and comfort to the patients and provide a positive effect on the healing of illness. According to the Ministry of health (2001) on the registration and practice of nurses, Nursing care standards include assessment, determination of nursing diagnoses, planning, implementing nursing actions and nursing evaluation.

The standard of nursing care must be filled and completed in the medical record after each patient's service. It is very beneficial to improve the quality of patients care and as a source of information on the provision of health services in hospitals.

The medical record can be statedas high quality, if the medical record can describe the whole process of the service correctly, completely, reliably, valid, timely, it can be used for analysis and decision-making, uniform, constraints on standardized elements consistent in its use, and easily obtained through communication systems between health workers (Sanjoyo, 2007).

The knowledge of medical personnel and paramedics is generally still low on the filling and utilization of medical records (Hutagalung, 2005). Less nurse obedience in applying documentation records of nursing care result in low quality complements of the medical record.

Based on the background above, the researchers are interested in conducting a study on the determinant of medical record completeness in nursing care documentation that includes education level, employment status, working period, knowledge, responsibility and organizational support (agency, on completeness of filling in nursing care documentation documentation in medical record at Dr. R. Sosodoro Djatikoesoemo hospital, Bojonegoro.

SUBJECTS AND METHODS

1. Study design
This was an analytic observational study with a cross sectional design. The study was conducted in Dr. R. SosodoroDjatikoesmo hospital Bojonegoro on April 2018.

2. Population and sample
The population in this study was 213 nurses in Installation of Inpatient at Dr. R. Sosodoro Djatikoesmo hospital, Bojonegoro.

The sample size was 150 nurses selected with proportional random sampling based on level of education (S1: 115, D3: 35).

3. Study variables

The independent variables of this study included the level of education, employment status, employment, employment status, responsibilities and organizational support while the dependent variable was the completeness of the documentation of nursing care inpatient care in the medical record.

4. Operational definition of variables

The level of education was defined as the highest level of formal education that has been taken by nurses at Dr. R Sosodoro Djatikoesoemo hospital, Bojonegoro, with a categorical data scale consisting of D3 and S1, as measured by questionnaires.

The employment status was defined as the nurse status as contract or permanent employee/civil servant in Dr. R Sosodoro Djatikoesoemo hospital Bojonegoro with a categorical data scale consisting of civil servants and non civil servants, as measured using questionnaires.

The period of work was defined as the length of time the nurse worked since assigned in Dr. R. Sosodoro Djatikoesoemo hospital Bojonegoro since the first day of work until the study was conducted. The measurement scale was categorical, coded 0 for <3 years and 1 for ≥3 years. The data were measured using questionnaires.

Knowledge was defined as a person's knowledge that can be gained from education, training or experience derived from various sources, with a scale of categorical data consisting of good and lacking.

Responsibility was defined as the responsibility to bear including post control visits, or to provide responsibility for the consequences. The data were measured using questionnaires. The measurement scale was categorical, coded 0 for poor and 1 for good.

Organizational support was defined as the extent to which co-workers behave in supporting and strengthening employees by optimizing the use of employment knowledge, skills and attitudes on the job. The data were measured using questionnaires The measurement scale was categorical.

The completeness of the medical record of nursing care i was defined as s the documentation of nursing care (assessment, nursing diagnosis, nursing plan, implementation of nursing actions, evaluation, nurse's signature and nurse name, nursing resume, nursing record and patient record returning or dying on the contents of medical records. The data were measured by checklist. The measurement scale was categorical.

5. Reliability Test

Based on the reliability test on the variables of knowledge, responsibility and organizational support, the results can be seen in table 1.

6. Data Analysis

Univariate data analysis of categorical data sample was described using parameter n and %. Bivariate analysis was conducted using Chi Square. Multivariate analysis used a multiple logistic regression.

Table 1. Reliability Test of Questionnaire

Variable	Cronbach's Alpha	Conclusion
Knowledge	0.90	Reliable
Responsibility	0.85	Reliable
Organizational Support	0.83	Reliable

RESULTS

The result of research subject characteristic in table 2 shows that the nurse age is mostly <40 years (84%). The gender of the nurse was mostly women which was about 150 (66%). The level of nursing education in duty inpatient care ward of D3 education background was 115 nurses (76.7%). Staffing status of inpatient nurses in Dr. R Sosodoro Djatikoesmo hospital Bojonegoro still consists of a lot of non-civil servants for about 85 nurses (56.7%). The most nurse work period is ≥3 years for about 115 nurses (76.7%). Besides, the nurse knowledge still lacked which is equal to 129 (86%).

The responsibility of nursing inpatient at medical record is 83 (55.3%). The organizational support in filling nursing care documentation is good for about 75 (50%). The completeness of filling of inpatient nursing care documentation on medical record is more complete with 79 medical record file (52.7%).

Table 2.The characteristics of Subjects

Criteria	Classification	n	%
Age	<40 years old	126	84
	≥40 years old	24	16
Gender	Male	51	34
	Female	99	66
Educational background	D3	115	76.7
	S1	35	23.3
Employment status	Non Civil Servant	85	56.7
	Civil Servant	65	43.3
Working period	<3 years old	35	23.3
	≥3 years old	115	76.7
Knowledge	Good	21	14
	Poor	129	86
Responsibility	Good	83	55.3
	Poor	67	44.7
Organizational Support	Good	75	50
	Poor	75	50
The completeness of medical record fulfillment	Incomplete	71	43.3
	Complete	79	52.7

Table 3. Bivariate test of correlation between educational level, employment status, working period, knowledge, responsibility and organizational support to the completeness of filling in nursing care documentation documentation on medical record

Variable	Category	The Service Quality				p
		Lack		Good		
		N	%	n	%	
Employment status	Non Civil Servant	52	61.2	33	38.8	<0.001
	Civil Servant	19	29.2	46	70.8	
Working period	< 3 years old	29	82.9	6	17.1	<0.001
	≥ 3 years old	42	47.3	73	63.5	
Knowledge	Low	66	51.2	63	48.8	0.020
	High	5	23.8	16	76.2	
Responsibility	Poor	40	59.7	27	40.3	0.006
	Good	31	37.3	52	62.7	
Organizational Support	Poor	44	58.7	31	41.3	0.005
	Good	27	36.0	48	64.0	

Table 4. The results of bivariate analysis on the factors associated with the completeness of inpatient medical record filling

Variable	Category	Quality of service				p
		Poor		Good		
		N	%	n	%	
Working status	Private	52	61.2	33	38.8	<0.001
	Civil servants	19	29.2	46	70.8	
Tenure	< 3 tahun	29	82.9	6	17.1	<0.001
	≥ 3 tahun	42	47.3	73	63.5	
Education	Low	66	51.2	63	48.8	0.020
	High	5	23.8	16	76.2	
Responsibility	Poor	40	59.7	27	40.3	0.006
	Good	31	37.3	52	62.7	
Organizational support	Poor	44	58.7	31	41.3	0.005
	Good	27	36.0	48	64.0	

Table 3 showed that the educational level of bachelor degree for nurse in completing the filling of nursing care documentation on medical record was better (77.1%) than the nurses with diploma degree (45.2%). The result of analysis showed that there was a positive and significant relationship between educational level and the completeness of inpatient medical record filling.

Civil servant status of employment in completing the filling of documentation of nursing care on inpatient medical record was better (63.5%) than non-civil servant nurse (17.1%). The result of analysis showed that there was a positive and significant relationship between employment status and the completeness of inpatient medical record filling.

The tenure ≥ 3 years in completing the nursing care documentation on inpatient medical record was better (64.8%) than the tenure of nurse <3 years (21%). The result of analysis showed that there was a positive and significant relationship between the tenure and the completeness of inpatient medical record filling.

A good nurse's knowledge in completing nursing care documentation on inpatient medical record was better (76.2%) than nurses with lack of knowledge (48.8%). The result of analysis showed that there was a positive and significant relationship between knowledge and the completeness of inpatient medical record filling.

Good nurse's responsibility in completing nursing care documentation on inpatient medical records was better (62.7%) than nurses with less responsibility (40.3%). The result of analysis showed that there was a positive and significant relationship between responsibility and the completeness of inpatient medical record filling.

Strong organizational support to nurses in completing the filling of nursing care documentation on inpatient medical records was better (64.0%) than low organizational support to nurses (41.3%). The result of analysis showed that there was a positive and significant relationship between organizational support and the completeness of inpatient medical record filling.

Table 5. The results of multivariate analysis on the factors associated with the completeness of inpatient medical record filling using multiple logistic regression

Variable	OR	95% CI		p
		Lower	Upper	
Educational ≥Senior high school	2.94	1.08	8.00	0.034
Employment status (civil servant)	4.01	1.71	9.40	0.001
Tenure (≥3 years)	8.84	2.78	28.16	<0.001
Good knowledge	5.37	1.40	20.55	0.014
High responsibility	3.13	1.35	7.28	0.008
Good organizational support	4.08	1.72	9.67	0.001
N observation = 150				
-2 Log Likelihood= 142.2				
Nagelkerke R Square= 47.1%				

Based on Table 4, the results of multiple logistic regression equations can be explained as follows:

The level of education affected the completeness of the filling of inpatient nursing documentation on the medical record which was statistically significant. The education level of the nurses who have bachelor degree has 2.94 times probability in filling completely than the diploma III nurses (OR= 2.94; 95% CI= 1.08 to 8.00; p= 0.034).

Employment status affected the completeness of inpatient nursing care documentation in the medical record and it was statistically significant. Civil servant status of employment has 4.01 times probability to fill completely than non-civil servant nurses (OR= 4.01; 95% CI= 1.71 to 9.40; p=0.001).

Tenure affected the completeness of inpatient nursing care documentation in the medical record and it was statistically significant. Nurse's tenure of ≥3 years was 8.84 times more likely to fill completely than nurses who worked for >3 years (OR= 8.84; 95% CI= 2.78 to 28.16; p<0.001).

Knowledge affected the completeness of inpatient nursing care documentation in the medical record and it was statistically significant. Good nurse's knowledge has 5.37 times probability to fill completely than nurses who have poor knowledge (OR= 5.37; 95% CI= 1.40 to 20.55; p= 0.014).

Responsibility affected the completeness of the filling of inpatient nursing documentation on the medical record which was statistically significant.Nurses with good responsibility were 3.13 times more likely to fill completely than nurses who have lack of responsibility (OR= 3.13; 95% CI= 1.35 to 7.28; p=0.008).

Organizational support affected the completeness of the filling of inpatient nursing documentation on the medical record which was statistically significant. Nurses with good organizational support have 4.08 times likelihood to fill completely than nurses who have lack of organizational support (OR= 4.08; 95% CI= 1.72 to 9.67; p= 0.001).

The score of Negelkerke R Square was 47.1%, which mean that the five independent variables (educational level, employment status, tenure, knowledge, responsibility and organizational support) were able to explain the factors that affect the completeness of filling in inpatient nursing care documentation at medical record of 47.1% and the rest was 52.9%

which explained by other factors outside the study.

DISCUSSIONS

1. The effect of educational level on the completeness of inpatient nursing care filling on medical record.

The result of this study showed that educational level variable of nurses affected the completeness of inpatient nursing care filling on medical record, and it was statistically significant.

The result of this study was in line with Pratiwi et al, (2014), who stated that there was a relationship between nurses' educational levels and the completeness of nursing care documentation filling. Nurses who have bachelor degree and Nerscan completely filled the documentation assessment of nursing care than the D3 nurses. A study by Moradi et.al, (2014) stated that there was a significant relationship between educational level and the work quality of nurses. In addition, a study by Okaisu et al, (2014) indicated that staff training was insufficient to achieve better nursing care documentation, therefore, an ongoing improvement in education was needed.

2. The effect of employment status on the completeness of inpatient nursing care filling on medical record

The result of this study showed that employment status variable of nurses affected the completeness of inpatient nursing care filling on medical record, and it was statistically significant.

The result of this study was in line witha study by Maryati (2017) which stated thatthe quality of medical record documents filled by civil servant nurses was more complete (70%) compared to non-civil servant nurses (57.8%). In addition, according to Triyanto and Kamalludin

(2008), civil servant nurses were more responsible for the completeness of nursing documentation. This was also in line with a study by Dehghan et al, (2013) which stated thatnurses who had higher employment status after intervention experienced an increase in nursing records from 25.8% to 36.6%.

3. The effect of tenure on the completeness of inpatient nursing care filling on medical record

The result of this study showed that tenure variable of nurses affected the completeness of inpatient nursing care filling on medical record, and it was statistically significant.

The result of this study was in line witha study by Kumajas et al, (2014), which stated that there was a meaningful relationship between tenure and nurse's performances. This was supported by a study by Sofiana and Purbadi (2006) in Kumajas et al. (2014) which stated that nurses with a tenure of ≥3 years have better knowledge than nurses who have a tenure of <3 years. According to Nursalam (2009), the longer the nurse's tenure, the more the nurse's experiences in providing nursing care in accordance with the applicable standards or procedures.

4. The effect of knowledge on the completeness of inpatient nursing care filling on medical record

The result of this study showed that knowledge variable of nurses affected the completeness of inpatient nursing care filling on medical record, and it was statistically significant.

A study by Khoirunisa and fadilah (2017) stated that most of the nurses have good knowledge about nursing care documentation which was 41 nurses (83.7%), and there was a significant relationship between the level of nurse knowledge about nursing documentation with the nurses'

attitude in documenting the nursing care. Another study by Icon et al. (2016) stated that good knowledge significantly affected the nursing documentation. This was supported by Siamian et al. (2008) who stated that there was a significant relationship between knowledge and medical record documentation.

The nurse's knowledge determined the nurse's actions in providing services to the patient, therefore, the nurse's actions based on the knowledge would provide better service than the nurses who perform actions that were not based on the knowledge, therefore, knowledge was very influential on the completeness of nursing care documentation filling (Nuryani et al., 2014). In addition, according to Notoatmodjo (2010), knowledge was a very important factor to determine the actions of a person, so that the behavior based on the knowledge would be more long-lasting than the behavior which was not based on knowledge, it mean that the higher the knowledge of a person, it was expected that the better the behavior that she/he performed.

5. The effect of responsibility on the completeness of inpatient nursing care filling on medical record

The result of this study showed that responsibility variable of nurses affected the completeness of inpatient nursing care filling on medical record, and it was statistically significant.

The result of a study by Ulum and Wulandari (2013) stated that most of the nurse team (83.3%) has good responsibility. This responsibility was the responsebility of providing nursing care services and also in the recording. Another study done by Khoirunisa and Fadilah (2017) stated that 18 nurses agreed that nursing care documentation was the nurses' duty, and nurses have to be responsible for documenting every action given to the patients.

A study by Titis (2014), stated that nursing care documentation became an important matter as the evidence of responsibility and accountability of nurses in doing their duties. In addition, Nugraha (2012) stated thatthe nurses must be able to understand and fully understand their responsibilities as a nurse performed by writing the complete nursing documenttation on the prescribed sheet, because documenting nursing care was the personal responsibility of each nurse.

6. The effect of organizational support on the completeness of inpatient nursing care filling on medical record

The result of this study showed that organizational support variable of nurses affected the completeness of inpatient nursing care filling on medical record, and it was statistically significant.

This study was in line with a study by Mandagi et al. (2015) which stated that there was a significant relationship between supervision of the leadership with the nurses' performances in applying nursing care, in addition, there was a significant relationship between the reward system and the performance of nurses in applying nursing care. A study by Saleem (2015) showed that the support from hospital organization would significantly improve the nurses' performances. In this study, the support from colleagues can improve the completeness of nursing care documentation filling (64.0%). It was possible that support to other workers was always given due to the similarity of the profession.

This statement was in line with a study byUlum andWulandari (2013), which stated that the support from colleagues in doing a job was one of the important things, especially in the implementation of

nursing care.Peer support was measured based on the implementation of nursing care conducted by the co-worker, and also the help from a colleague if the other nurse has difficulty. Co-workers who did nursing care properly would make other colleagues to be better in doing their job. Lack of recognition of well-performing employees, quality performance results, the absence of formal performance assessment systems, poor working condition, and incentives would affect the nurses' performance in completing nursing care documentation (Awases et al., 2013).

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