

Evaluation of Nutritional Services for the Inpatients at X Hospital, Yogyakarta

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INDEXING

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ABSTRACT

Nutritional services management contributes to the acceleration of healing process, health maintenance and nutritional status improvement. Poor nutritional service management leads to a high risk of patients' health degradation, and it even can lead to death. This study aims to evaluate the implementation of three aspects of nutritional service management, namely human resources, method, and equipment in the third-class ward of X Hospital. The methods used in the research were mix research methods which involved descriptive observational design. Data collection was conducted in a cross-sectional manner. Respondents selected included 30 nurses and 2 nutritionists while informants consisted of 5 nurses and 2 nutritionists. The data collection used questionnaires, checklists and interview guides. Observation of patients' medical records was done retrospectively in 3 months, involving 30 files. The quantitative analysis used descriptive-inferential statistics and correlation test. The qualitative data were analysed on the basis of codes of themes and sub themes. The results of the study found that the management of human resources in regard to nurses and nutritionists was not yet good, management of nutritional service management performed by the nurses was good but was in contrast to the management performed by the nutritionists, which was not good, and equipment management was good. To improve the performance of nutritional services management, it is necessary to adjust the management in accordance with the existing rules and guidelines, implementation of socialization, supervision, monitoring and evaluation on a regular basis.

Kata Kunci:

Manajemen;
Pelayanan Gizi;
Pasien Rawat Inap;

Manajemen pelayanan gizi berkontribusi pada upaya mempercepat proses penyembuhan, mempertahankan tingkat kesehatan dan meningkatkan status gizi. Manajemen pelayanan gizi yang buruk menyebabkan tingginya resiko penurunan kesehatan pasien bahkan dapat menyebabkan kematian. Penelitian ini bertujuan mengevaluasi pelaksanaan tiga aspek manajemen pelayanan gizi yaitu sumber daya manusia, tata laksana, dan peralatan di bangsal kelas tiga Rumah Sakit X. Metode penelitian menggunakan penelitian campuran dengan desain deskriptif observasional. Pengambilan data secara belah lintang. Responden perawat sebanyak 30 orang dan ahli gizi 2 orang, serta informan 5 orang perawat dan 2 orang ahli gizi. Pengumpulan data menggunakan kuisisioner, checklist dan panduan wawancara. Observasi data rekam medis pasien secara retrospektif 3 bulan sebanyak 30 berkas. Analisis kuantitatif menggunakan statistik deskriptif-inferensial dan uji hubungan. Data kualitatif dianalisis berdasarkan kode tema dan sub tema. Hasil penelitian menemukan bahwa manajemen sumber daya manusia perawat dan ahli gizi belum baik, manajemen tata laksana pelayanan gizi oleh perawat telah baik dan oleh ahli gizi belum baik, dan manajemen peralatan sudah baik. Untuk meningkatkan kinerja manajemen pelayanan gizi diperlukan penyesuaian tata laksana yang mengacu pada peraturan dan pedoman yang berlaku, pelaksanaan sosialisasi, supervisi, monitoring dan evaluasi secara berkala.

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INTRODUCTION

Nutritional services at hospitals are given in the form of nutritional care to outpatients and inpatients in accordance with the condition of patients based on their clinical state, nutritional status, and body metabolism

status.¹ In providing nutritional services for inpatients, there is a series of continuous nutritional care given to clients of patients, which covers nutritional assessment, determination of nutritional diagnose, nutritional intervention, monitoring and evaluation of nutrition (ADIME),^{1,2} aiming at

accelerating the healing process, maintaining health status and improving nutritional status.¹

According to Noor (2015), and Issakh and Wiryawan (2014), activities and organisational goals can be achieved through organisational management that includes human resources, material management, equipment, costs and markets.^{3,4} In line with that, nutritional services management at hospitals comprise the management of Human Resources in their efforts to provide nutritional care, methods used to determine nutritional status of a patient, and availability of facility and infrastructure of nutritional services at hospitals.^{1,2} Accordingly, activities and goal of nutritional services can be achieved if they were conducted in a good management.

Diverse research results on nutritional services suggested that if when nutritional services were conducted improperly, they might cause worsening condition of patients,¹ cost increase, worse infection, high risk of recovery failure,^{5,6} longer duration of treatment,^{5,7} and worse condition that might increase risk of death.^{1,5,6,8}

A research on Human Resources conducted by Hartati and Hardoyo (2011) explained that nursery care process was highly affected by inner factors and the environment of nurses.⁹ In regard to compliance aspect of nursery methods, it showed that the implementation which complied with the standard operational procedure (SOP) in Al Ihsan Hospital in Bandung only reached 75.25%,¹⁰ in Semarang Hospital 71.7%,¹¹ and in Gambiran Hospital in Kediri it was declared insufficient.¹² In terms of equipment, insufficient facility and infrastructure would bring obstacles to the services provided for patients and it also would bring risks to them.^{13,14} If observed more closely, the negative impacts received by the inpatients were likely caused by nutritional services management that had not performed optimally.

Based on the condition that management aspect has an important role in nutritional services, and each aspect has a strong correlation, the authors conducted a research on an evaluation of the aspects of Human Resources management, methods, and facility and infrastructure of nutritional services for inpatients in X Hospital. The objective of this research was to identify the implementation of nutritional services based on the aspects of Human Resources, methods, and facility and infrastructure.

LITERATURE REVIEW

Management can be defined as function, collectivity as well as skill. Based on its function, management consists

of planning, implementation and monitoring.^{4,15} As a form of collectivity, its implementation involves people who perform management activities, and as a skill it uses conceptual, interpersonal and technical skills in an organisation.⁴ Management was used by organisations to manage activities to achieve a goal through managing six aspects of management, which are Human Resources, methods, materials, equipment, cost, and market.³

Nutritional services for inpatients are a series of process of nutritional care process that is continuous, covering assessment process, diagnosis, intervention, monitoring, evaluation (ADIME) given to clients or patients using standard operational procedure (SOP) in the form of the steps that have to be taken for a particular job in a controllable and consistent manner.^{1,2}

The implementation of nutritional services for inpatients at hospitals by the Nutritional Care Team, which was a group of professionals at a hospital who concern nutritional services for patients. The team comprises doctors or specialist doctors, nutritionists, nurses, and pharmacy who hold a joint role and task in providing a complete and qualified services.¹ Nurses, who are in charge in conducting initial nutritional assessment, have to have sufficient basic education and skills to ensure the quality of service given to the consumers and prevent fatal mistakes, understand all treatments they give, both from scientific and ethical aspects, are able to cooperate with people from other professions, and understand the role of each party.¹⁶ Nutritionists in the nutritional services at hospitals is a profession pertaining to nutrition, comprising Registered Dietician and Technical Registered Dietician who have to comply with the rules stipulated in Guidelines of Hospital Nutritional Services (HNS) and Guidelines of Standardised Nutritional Care Process (SNCP) when they perform their duty to provide nutritional care.^{1,2}

Methods of nutritional care for inpatients starts with initial nutritional screening process done by nurses, which intends to identify patients having risk of malnutrition, zero risk of malnutrition, or special condition.¹ Patients having risk of malnutrition are those having Malnutrition Screening Tools (MST) value > 2, while special patients are those, among other, who have diabetes mellitus, cardiac disease, and blood vessel issues.¹

The nutritional screening result will be evaluated by nutritionists to determine that patients will be given normal nutritional services if their nutritional status is good or they have zero risk of malnutrition, and patients will be given Standardised Nutritional Care Process if their nutritional screening result indicates malnutrition due to decreasing

weight and food intake or they belong to the criteria of special patients.¹

Nurses and nutritionists used equipment and materials in doing nutritional services, which are supporting nutritional assessment tools and nurse information sheets for nurses or nutritional care sheets for nutritionists.^{1,2} Equipment management needs to be done to ensure that the equipment is always available when needed, can be used efficiently and effectively, in proper quantity and good quality. To support this, process of procurement, distribution, storage, and equipment and goods maintenance are conducted.¹⁷

The Ministry of Health stated that to support achieving the goal of proper and good quality nutritional care and nutritional services, documenting each stage of nutritional care activities stated in medical record.² According to Sutabri (2005), documentation is record and report about data of facts that describe events and real entity of an observation result, which is required for estimating, considering and making a decision.¹⁸ Therefore, a very good filling out of documents and documentation system will highly support perfect realisation of nutritional service for inpatients.

RESEARCH METHODS

The research was conducted in the third-class ward of X Hospital. This research was designed with the use of mix methods which employed Sequential Explanatory as the research strategy, which refers to an integrative approach between quantitative method and qualitative method done in sequence.¹⁹ This is an observational descriptive research, in which the researcher observes her or his research subject without giving any treatment. Data was collected in a cross-sectional manner in April 2017. This research collected and analysed the primary and secondary data related to Human Resources management, methods and facility as well as infrastructure. The research respondents were selected using random sampling method, involving 30 nurses, 2 nutritionists, and 30 files of medical record (MR) which fulfilled the inclusion criteria. The independent variable refers to nurses' knowledge in filling out the assessment form and substance accuracy, while dependent variable refers to the completeness of information filled out in the nutrition assessment form.

Data collection of respondents used questionnaires and checklist of medical record information. Validation test of the questionnaire used pearson product moment

correlation at a significant level of 5%.^{20,21,22} The reliability test used Alpha Cronbach with coefficient > 0.6 .^{19,20,21}

Analysis of the quantitative data used descriptive-inferential statistics to know the characteristics of the patients and nurses who were selected as the respondents. To know the correlation of nurses' knowledge on nutritional care and information filled out in the nutritional care sheet started with normality test of the data using Kolmogorov-Smirnov method, generating a significant value > 0.05 and was continued with correlation test using Rank-Spearman's test or Pearson Correlation.¹⁹ The data was presented in the form of tabulation.

Observation of the quantitative data of medical record was conducted retrospectively from January to March 2017 to assess the completeness of information filled out in the nutritional care sheet in the medical record files of patients having cardiac disease, diabetes mellitus, or hypertension. The analysis was done descriptively and presented in the form of tabulation.

The qualitative data was collected from 5 nurses and 2 nutritionists who were selected using purposive sampling method.^{19,23} through in-depth interview based on an interview guide as the research instrument. The data collected comprised the implementation of nutritional care methods and equipment management. The data analysis used coding of the themes and sub themes and was presented in the form of table and qualitative description.

RESULT AND DISCUSSION

Characteristics of Respondents

Nutrition unit as a medical support service, its implementation refers to the Decree of Hospital Director X Number: 0319/SK.3.2/IV/2015 on Guidelines of Nutritional Services, covering activities of food provision, inpatient nutritional services, outpatient nutritional services, and nutrition research and development.

Table 1. Characteristics of nurses

Characteristics	Frequency	Percentage (%)
Age		
15-24 years old	6	20
25-34 years old	24	80
Total	30	100
Education		
Bachelor in Nursing	11	36,67
Diploma in Nursing	19	63,33
Total	30	100

Source: data processed from Human Resources Department of X Hospital

There were 30 files of patients' medical record that were observed and their characteristics were divided by gender, diagnose of disease and age (Table 2). Treatment duration of patients was less than 7 days, or about 3-4 days on average, for patients having cardiac disease, diabetes mellitus or hypertension. Initial nutritional assessment of patients who were treated used the MST method.

Table 2. Characteristics of patients' medical record by gender, diagnose of disease and age

Patients' characteristics	Frequency	Percentage (%)
Gender		
Female	15	50
Male	15	50
Total	30	100
Diagnose		
Cardiac disease	10	33,33
Diabetes	10	33,33
Hypertension	10	33,33
Total	30	100
Age		
< 45 years old	2	6,66
45-59 years old	14	46,66
60-69 years old	8	26,66
> 70 years old	6	20
Total	30	100

Source: data processed from Medical Record Department of X Hospital

Human Resources Management in Nutritional Care Services

Nurses

Level of nurses' knowledge on the completeness of information filled out on the nutritional assessment forms and completeness of information filled out on nutritional care sheets by the nurses were presented in Table 3 and Table 4.

Table 3. Nurses' level of knowledge on filling out nutrition assessment form

Level of Knowledge	Nutritional Assessment		Nutritional and Metabolic Patterns		Needs of Education (diet and nutrition)	
	f	%	f	%	f	%
Less	3	10	1	3	0	0
Adequate	3	10	12	40	6	20
Good	24	80	17	57	24	80
Total	30	100	30	100	30	100

Source: Analysis Result (2017)

Table 4. Completeness of information filled out on nutritional care sheets by nurses (n=30)

Completeness	Nutritional Assessment		Nutritional and Metabolic Patterns		Needs of Education (diet and nutrition)	
	f	%	f	%	f	%
Complete	25	83,3	8	26,7	13	43,3
Incomplete	5	16,7	22	73,3	17	56,7
Total	30	100	30	100	30	100

Test on the correlation between nurses' knowledge level with the completeness of information filled out on the nutritional care sheet consisting of filling out the nutritional assessment forms, functional patterns and needs of educational had generated the data presented in Table 5.

Table 5. Difference between nurses' level of knowledge and completeness of information filled out on the nutritional care sheets and medical record

Difference test	Test method	Sig.	Description
Knowledge and filling out of nutritional assessment form	Rank-Spearman's	0.262	No correlation
Knowledge and filling out of functional pattern form	Pearson Correlation	0.008	Have correlation
Knowledge and filling out needs of education form	Rank-Spearman's	0.528	No correlation

Note: in Pearson Correlation test, coefficient value of -0,476 was found

Nutritionists

Nutritionists were in charge of thoroughly filling out the nutritional assessment form which comprised Nutritional Care Form, Nutritional Re-Screening Form, Integrated Patient's Development Record (IPDR), and Education Record. The analysis of completeness of information filled out on the four forms are presented in Table 6.

Table 6. Completeness of information filled out on nutritional care, nutritional re-screening, IPDR, and education record forms (n=30)

Nutritional assessment form	Completely filled out		Partly filled out		Not filled out	
	f	%	f	%	f	%
Nutritional care	0	0	0	0	30	100
Nutritional re-screening	0	0	0	0	30	100
IPDR	14	46,67	0	0	16	53,33
Education record	0	0	7	21,37	23	78,63

Note: IPDR = Integrated Patient's Development Record

Management of Nutritional Care Methods

Management of nutritional care methods at X Hospital were divided in two stages, which were nutritional assessment method carried out by nurses at inpatient ward, and nutritional care assessment carried out by nutritionists.

Nutritional Assessment Method by Nurses

A nurse at inpatient ward assessed nutritional status of a patient who was just admitted to a treatment ward using Initial Nursing Assessment Form (MR.13.b) containing nutritional assessment, nutritional and metabolic patterns, and needs of education (diet and nutrition).

Table 7. Coding result of interview with nurses about filling out nutritional assessment form

Description	Sub theme	Theme
Informant 1	Filling out the form based on MR data, asking the patient, measuring, and rechecking the existing data	Nurses have filled the nutritional assessment form through various techniques of data collection
Informant 2	Filling out the form based on MR data, asking the patient, measuring, and rechecking the existing data	
Informant 3	Filling out the form based on MR data, asking the patient, measuring, and rechecking the existing data	
Informant 4	Filling the form based on MR data, asking the patient, measuring, and rechecking the existing data	
Informant 5	Filling out the form based on MR data, asking the patient, measuring, and rechecking the existing data	

Note: MR = medical record

The implementation of nutritional assessment method and rules of filling out the form by the nurses are presented in Table 7 and 8.

Table 8. Coding result of interview with nurses about the rules of filling out nutritional assessment form

Description	Sub theme	Theme
Informant 1	Soft file of the SOP is available in the computer but not yet read and no training given	Rules of filling out the form have been made by the hospital and stored in the computer. Nurses cannot access the rules and have not yet been trained on filling out the nutritional assessment form
Informant 2	The SOP is available in the computer and no training given	
Informant 3	The SOP is available in the computer and no training given	
Informant 4	The SOP is available in the computer and no training given	
Informant 5	A lot of SOPs are available in the computer and not training given	

Note: SOP = standard operational procedure

The nurse then conveyed the information on the result of the nutritional assessment to a nutritionist and asked for instruction about the nutritional care that had to

be given to the patient. The nurse coordinated with the nutritionist by telephone and/or face to face meeting during the nutritionist's visit (Table 9).

Table 9. Coding result of interview with nurses about method of coordinating with nutritionists

Description	Sub Theme	Theme
Informant 1	Documents collected then contact nutritionists	
Informant 2	Documents collected and convey information to nutritionist by phone and during their visit	Coordination have been made by nurses with nutritionists to inform them about the nutritional assessment of the patient
Informant 3	Documents collected and convey information to nutritionists by phone and during their visit	
Informant 4	Documents collected then contact nutritionists	
Informant 5	Documents collected then contact nutritionists	

Nutritional Care Services by Nutritionists

The nutritionists carried out nutritional task based on the SOP No. 30-GZ/X/2016 on Further Nutritional Assessment, which requires two assessments, namely:

1. The score of MST resulted from the initial nutritional assessment screening carried out by a nurse as recorded on the Initial Nursing Assessment Form (MR.13.b).
2. Special condition of inpatient.

In assessing the condition of a patient, a nutritionist bases her/his assessment on the initial data as recorded on the Initial Nursing Assessment Form (MR.13.b) as conveyed in the following statement:

"I read all the checklist of initial screening and data pertaining to nutrition or data that supports (provision of) nutrition. I focus on the MST, including the checklist of needs of education" (Nutritionist informant 1).

Considerations and decisions of giving nutritional care and nutritional care notes performed by nutritionists to patients with MST value 0 or 0-1, and patients having diabetes mellitus, hypertension and cardiac disease were conveyed in the following statement:

"The follow-up is not necessarily (in the form of) further assessment, but through education instead and it is recorded in the IPDR, just like (what is stated) in the SOP" (Nutritionist informant 1).

Patients with MST value 2-3 and patients having diabetes mellitus or hypertension or cardiac disease would be given nutritional treatment as described in the following statement:

"Patients with MST value of 2-3 are recorded in the further nutritional assessment, with the ADIME, and also recorded in the IPDR. I do two stages since the IPDR is a collaborative work so that the doctor knows what treatments that a nutritionist has given and it can be read by other division" (Nutritionist informant 2).

Management of Equipment and Materials of Nutritional Care Services

Equipment and materials used in nutritional services consisted of measuring tools and nutritional care forms. Measuring tools were used by the nurses and nutritionists to obtain data of patients' condition through direct measuring. The aspects of measuring tools that were assessed were quantity, condition and maintenance (Table 10).

Table 10. Quantity, condition and maintenance used by nurses and nutritionists

User	Quantity	Condition	Maintenance
Nurse	Sufficient	Good	Regular
Nutritionist	Sufficient	Good	Regular

The nutritional care form was a form used by nurses or nutritionists to record the result of measurement or calculation or examination of a patient. The assessment result of the availability of nutritional care forms that would be used is presented in Table 11.

Table 11. Type, storage, and availability of nutritional care service forms

Type of form	Storage of blank forms	Available
Nursing initial assessment (MR.13.b)	Nurse station	Yes
Nutritional care (MR.19.e)	Nutritionist	Yes
Nutritional re-screening (MR.19.f)	Nutritionist	Yes
IPDR (MR.08)	Nurse station	Yes
Education record (MR. 10)	Nurse station	Yes

Implementation of Human Resource Management in Nutritional Care Services

Knowledge and Performance of Nurses

The nurses' level of knowledge on the filling out of nutritional assessment form, nutritional and metabolic

patterns, and needs of educational was dominated by “good” category. It indicated that the nurses already had understood the things that were required to be done in filling out the nursing care form. It was in line with what had been stated by Wuryandari (2013) that adequate knowledge of procedural aspects and the sequence of filling out the form performed by the nurses become the foundation of the level of completeness of the nursing care form,²⁴ since it was an important factor that nurses had to have to make decisions for the patients.²⁵ On the contrary, if the nurses did not have sufficient knowledge, there would be a tendency that they would not comply with the existing standards or perform poorly at the hospital.¹⁴

The research found that there was a correlation between the knowledge of the nurses and the completeness of information on the functional pattern form. It was indicated by the negative value of Pearson correlation, which was -0.476. It means that the higher the nurses’ knowledge was, the lower the completeness of the information filled out on the functional pattern form would be.

On the other two correlation tests, which were between knowledge and nutritional assessment and between knowledge and needs of education, it was found that there was no correlation, which means that what was understood and known by the nurses in reality did not correspond with their knowledge.

The result of this research was in line with a research conducted by Mandagi et al. (2015) which stated that there was no significant correlation between nurses’ competence and their performance in implementing nursery care.²⁶ Further to that, Mandagi et al. (2015) provided an explanation on the absence of correlation between nurses’ competence and their performance, stating that it was something unusual as there was supposed to be correlation between competence and performance, in which competence meant an ability to carry out a work based on the skills, knowledge, and attitudes required by a job.²⁶ Meanwhile, according to Amoey et al. (2017), the absence of correlation between the education and experience of nurses and their performance was because nurses had not obtained any special education on nutrition. Accordingly, even though they had prolonged nursing experiences, the absence special education about nutrition issues could not increase nutrition knowledge.²⁷

Some researchers claimed that accomplishment of tasks of nurses was not only influenced by knowledge,^{14,25} but also by other factors such as motivation and perception of nurses to their job,¹² provision of understanding by the

management to the nurses about the importance of recording and reporting as an effort to implement professional nursery care,¹¹ and clear involvement and responsibility of the nurses in performing their tasks.²⁸ For this reason, an important aspect of human resource management was managing how to create equality between knowledge possessed by the employees and the performance they had,¹¹ especially for entry of nutrition care information in the medical record, informs the team about the nutritional status, food consumption, nutritional requirements, and diet therapy strategies.²⁹

Knowledge and Performance of the Nutritionists

The research result found that there were no Nutritional Care Forms (MR.19.e) found in patients’ medical record files which were taken as the object of this research, whereas these forms were those that the nutritionists were supposed to use to assess and determine the nutritional care given to the patients. This condition indicated that contents and steps filled out on the Nutritional Care Forms (MR. 19.e) were not taken reference by the nutritionists in assessing the status of basic condition of the patients and their nutritional needs, whether they had to be given nutritional services in accordance with the ADIME or ordinary ones. It was certainly against the tasks that nutritionists who were supposed to conduct an assessment or further study on patients having risk of malnutrition, suffering from malnutrition or having special conditions.¹

The absence of using Nutritional Care Form (MR.19.e) by the nutritionists was caused by their understanding on the terms of service provision which were different from the existing ones. This was certainly very influential on the nutritional services that were supposed to be obtained by patients with special conditions who had to be given nutritional services in accordance with ADIME. According to Leistra *et al.* (2014), the screening performed by nutritionists had to be executed optimally as it was part of their professional responsibility.²⁸

This research also generated a result that showed the completeness of information filled out on Integrated Record of Patients Development form as much as 46.67% and on education record form as much as 21.37%. It indicated that the nutritionists had not yet a thorough understanding of the procedure of implementing further nutritional assessment and the importance of patients to get education on nutrition intake. They considered patients treated were those with chronic health state, in repeated treatment, and that the

patients had understood their diseases, food restriction as well as recommended diet that had been previously prescribed to them. Assumption or perception of the nutritionists is basically improper since education given to patients having risk of diseases is an obligation that has to be executed although the patients are those having repeated treatment. According to Nurlala et al. (2006), the performance of nutritionists was declared good based on their compliance with the standards and result of services.³⁰ In addition, the minimum service standard stipulated by the Ministry of Health had to be taken as reference in providing nutritional care.³¹

The completeness of information on the nutritional re-screening forms (MR.19.f) was 0% because the length of stay ranged from 3 to 4 days. It was based on the regulation issued by the Ministry of Health which required that nutritional re-screening be carried out after the inpatients undergo 7 days of treatment.^{1,2} Those undergoing inpatient treatment for 3 or 4 days, therefore, were not given nutritional re-screening.

Management Implementation of Nutritional Care Services Methods

Nutritional Assessment Carried out by Nurses

The results showed that patients having cardiac disease, diabetes mellitus and hypertension were mostly elderly people. This is in line with a research conducted by Gowan and Mery (2001) in Simanjutak et al. (2014), which stated that age was the most important risk factor that triggered diseases like cardiac disease, diabetes mellitus and hypertension, that normally started when people hit 40 years old.³² Other researches which were conducted to find the prevalence of heart diseases, diabetes mellitus and hypertension also stated that age had a significant correlation to the presence of the diseases^{33,34,35} In addition, elderly patients also tended to have nutrition-related disease as they belong to a group vulnerable to nutrition.¹

Using the Nursing Initial Assessment Form (MR.13.b) as the method employed by the nurses in carrying out nutritional assessment had already complied with the standard set by the Indonesia National Association of Nurses (INAN) since it contains aspects of observation, nursery diagnose, and treatment plan.

Nutritional assessment method was also implemented by the nurses for all patients. This was in line with Susetyowati dkk. (2014) who stated that nutritional assessment had to be carried out for every inpatient within

1 x 24 hours at the latest since a patient was admitted to the hospital to prevent malnutrition at the hospital and provide nutritional intervention properly and as early as possible.³⁶

In filling out and completing nutrition assessment, a nurse performed various techniques of data collection of a patient, that is by looking at the patient's bar code data, the data already recorded in the previous file, asking the patient, and taking necessary measurements. Standard of filling out nutritional assessment sheet had been set by the hospital and stored in a digital format but it was not yet comprehensively understood by the nurses. As a reference, the nursery care procedure has be easily accessed, known and understood by the nurses, so that the storage in digital format needs to be supplemented with a printed format and stored in a place that can be easily accessed to the nurse.

The existence of SOP will provide optimisation of the timeliness of filling out the sheets and accuracy of data required,¹⁴ integral part of the activities on nutritional education directed toward hospitalized patients,²⁹ and ensure that nurses fill out the sheets in accordance with the rules and all of these should be well introduced to nurses.¹¹

The substance in the SOP may contain general indicators, such as inpatient dietary coverage actions, evaluation and monitoring of nutritional status actions, actions on integration of nutritional assistance activities within the team, and actions supporting diet therapy.²⁹ In addition, it may also contain specific indicators in groups of patients with specific characteristics regarding the type of disease, the nutritional risk, the use of enteral or special diet.²⁹

Implementation of the Nutritional SOP by Nutritionists

Nutritionists did not always use nutritional care forms to provide services to patients having risk of malnutrition, including patients with special conditions. If we refer to the Ministry of Health regulation as stipulated in the Guidelines of NSH, and SNCP, when a patient falls under special category, her or his nutrition intake has to be given thoroughly through the Standardised Nutritional Care Process method.^{1,2} Through this method a proper nutrition can be given properly,³⁶ and the food provided can affect and stabilise patients having diabetes mellitus,³⁷ and hypertension.³⁸

According to Leistra *et al.* (2014), factors that supported the implementation of nutritional screening method required complete documents of nutritional screening, clear responsibility, simple, easy and fast methods,²⁸ and these factors will be taken as service

indicators which can be stipulated in standard performance indicators in their implementation, such as Good Nutritional Practice (*GNP*).³⁹ or Nutritional Care Quality (*NCQ*) and Food Service Quality (*FSQ*).²⁹

Implementation of Equipment/Materials in Nutritional Care Service

The quantity of equipment for measuring anthropometry and vital signs in ward 3B and 3A was sufficient, in a good condition and useable. Quantity, type, and condition of the equipment were recorded in inventory document, had control cards, maintained on a regular basis by electro medical technicians of the hospital, and documented thoroughly by the head of the ward. This research found that the forms used for nutritional care were always available at the nurse station and were monitored by the nurses to prevent lack of supply. Management of equipment and materials in nutritional care services had been carried out well to ensure accurate measurement performance.

This was in line with a research done by Dewi *et al.* (2015) who stated that equipment supply could affect the method of nutritional care services at hospitals.⁴⁰ In addition, the management and officers in charge in service unit, technicians and operators at the hospitals had to be able to manage the equipment properly in accordance with their own role and responsibility, which was ensuring availability, quality and efficiency of the equipment.⁴¹

According to Labe *et al.* (2016) support provided by facility and infrastructure has correlation to the performance of nurses in carrying out their nursery care.¹³ The availability of working equipment at the hospital are very important for them to perform their daily duties.⁴² In addition, inadequate facility and infrastructure has a big risk as much as 11,135 times higher of degrading performance in documenting nursery care.¹³

Equipment inventory needs to be carried out systematically in order to make it easier to track maintenance and calibration.⁴³ Maintenance should be done on a regular basis because maintenance done when the equipment is already broken will affect the performance of nutritional care services.^{44,45} Regular maintenance is also required to ensure that the equipment can be used when needed.⁴⁴

CONCLUSION

Based on the result of this research, which focused on the management nutritional services seen from the aspect of Human Resources, method, and equipment/materials at the inpatient unit of X Hospital. It can be concluded that nurses and nutritionists as Human Resources had complied with the required qualification of nutritional care personnel. The knowledge possessed by the nurses on the filling out of nutrition assessment forms was mostly categorised as “good”. In further test conducted, however, it was found that there was a negative correlation between knowledge and filling out of functional pattern sheets, and there was no correlation between knowledge and the completeness of information on the nutritional assessment forms and between knowledge and needs of education.

The knowledge of nutritionists was also insufficient yet in understanding the importance of patients having risk of malnutrition, suffering from malnutrition or having special conditions to get nutritional care in accordance with ADIME. Thus, the management of human resources in charge for nutritional services had not been implemented properly.

Initial nutritional assessment method had been well implemented by the nurses, but the form filling rules were difficult to access because they were stored in soft files on the computers and had not been thoroughly introduced to the nurses. As to the nutritionists, they had not yet implemented the method entirely, especially on filling the nutritional care forms. Thus, the method application had been properly implemented by the nurses, but not by the nutritionists.

The equipment for the nurses and nutritionists owned by the hospital was sufficient in terms of quantity, type, and quality. The equipment was also recorded in the inventory file and maintained on a regular basis. The forms required for nutritional services had been provided by the hospital for both nurses and nutritionists. The management of nutritional services equipment had, thus, been well implemented.

The limitation of this research concerned with data of the Nursery SOP that could not be obtained and, therefore, the analysis of the implementation of nutritional assessment method carried out by the nurses cannot be discussed deeply.

Suggestions for the improvement of nutritional services management viewed from the aspect of management, human resources, and equipment were

adjusted to the findings of this research, which include: the hospital needs to adjust the substance of the SOP with the existing rules and guidelines, properly introduce and organise training on how to fill documentation sheets in accordance with the SOP of nutritional service for nurses and nutritionists, provide SOP of nutritional services in printed or digital form which can be easily accessed by the nurses and nutritionists, the head of nurses and the head of nutritionists need to periodically monitor and evaluate the suitability of the existing procedures with the implementation of treatment performed by the nurses and nutritionists, and monitor the availability and performance of the equipment used for nutritional services.

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