Discharge Planning Model with Approach of Method in Improving Patients' Readiness for Discharge in Hospitals

Nurul Jannah¹, Tintin Sukartini¹, Abdul Aziz Alimul Hidayat²

¹Airlangga University, 60113, Indonesia; ²University of Muhammadiyah Surabaya, 60113, Indonesia

ABSTRACT

Background: Discharge planning is one form of nursing service that is still a problem in Indonesia. That is because its implementation has not shown the patients' readiness when returning from a hospital. One solution is to develop a discharge planning approach to *Medication, Environment, Treatment, Health teaching, Outpatient referral, Diet* (METHOD).

Aim & Objectives: This study aimed to analyze the discharge planning model with the METHOD approach in improving the readiness of patients returning from hospitals in Surabaya, Indonesia.

Method: The study used a quasi-experimental design with 40 patients whom were diagnosed with diabetes mellitus and were selected by purposive sampling. The data was collected with observation and interviews to assess the implementation of discharge planning and patients' readiness models. There were 18 questions using a Likert scale with answers 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Moreover, patients' readiness was measured using 16 questions consisting of questions about readiness for control, treatment, diet, activity and rest.

Results: The Mann-Whitney test results showed p value = 0.000 (p < 0.05). The intervention group that applied the discharge planning model with METHOD approach had a greater influence on the patients' readiness behavior to go home compared to the control group.

Conclusion: The readiness of patients treated in hospitals in Surabaya, Indonesia before going home can be improved by applying a discharge planning model that used the METHOD approach.

Keywords: Discharge planning, medication, environment, health, treatment, outpatient referral, diet

INTRODUCTION

Discharge planning is a dynamic process to assess current and advanced care needs that are aimed to make patient independence. The current discharge planning implementation and provision of health education are still given for several hours before the patient returns home from a hospital. This can cause patient's anxiety about the care or activity done related to his condition after going home. Discharge planning is also still fragmented because nurses only carry out routine activities in the form of return control information. Moreover, nurses' compliance with policies and standard procedures are still low.

Discharge planning is very necessary in providing nursing care to patients in the hospital. Therefore, it needs to be prepared by the nurses and done as early as possible. Doing this earlier can reduce the length of hospital care, the cost of care, and the recurrence rates, also allow intervention home plans to be done on time. An important aspect of education and care coordination is to prepare patients and families to successfully manage themselves after hospital discharge. [1, 2]

The results of the study in the hospital wards of Islamic Hospital Surabaya showed that discharge planning was not carried out immediately when the patient was hospitalized. Thus, the length of treatment

Corresponding Author:
Abdul Aziz Alimul Hidayat
Ns., M.Kes., Dr
University of Muhammadiyah Surabaya
Jl. Sutorejo No. 59 Surabaya, 60113 Indonesia.
Phone: +62 31 3811966; Mobile: +62 81 331340187
Email: azizhidayat@um-surabaya.ac.id

could not be confirmed. So far, the education that would be delivered in the discharge planning process has never been formulated before. The provision of health education was carried out on the day the doctor decided that the patient can go home. Evaluation on the patients' level of understanding is rarely done. The format of health education planning is incomplete. Hence, patients going home are less focused on METHOD. During this time, health education provided to patients during the hospital stay was not planned and documented because planning was only verbal.

The implementation of discharge planning has not been well implemented, causing the quality of service not in line with expectations. Besides that, there is no clear standard regarding discharge planning, which causes each hospital to have different discharge planning forms. The concept of the solution developed in this study is to develop discharge planning itself with the METHOD approach. METHOD is an abbreviation of aspects that need to be taught in the provision of health education. They aim to improve knowledge and understanding, also support for health conditions and follow-up care that must be done after patients go home. The purpose of this study is to analyze the effect of the discharge planning model with the METHOD approach in improving the readiness of patients returning home from hospitals in Surabaya, Indonesia.

METHOD

This is a quasi-experimental study. The research sample consisted of 40 patients whom were diagnosed with diabetes mellitus; there were 20 in the treatment group (Group A) and 20 in the control group (Group B). The sampling technique of purposive sampling was used to recruit respondents. The data were collected from participants who met the following inclusion criteria: (1) patients who need health education (2) patients who need continuity of care in Islamic Hospital of Surabaya, Indonesia, with a medical diagnosis of diabetes mellitus.

The data were collected by 18 questions using a Likert scale with answers 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree to assess the implementation of the discharge planning model. METHOD approach was used as measured by functionality, efficiency and usability. Meanwhile, patients' readiness was measured by using 16 questions about readiness to control, treatment, diet, activity and rest with yes = 1, no = 0.

Data analysis was used to determine the effect of discharge planning development with the METHOD approach on patients' readiness behavior using the Mann-Whitney test. The level of significance was set at $p < 0.05$.

RESULT

Table 1 shows the characteristics of respondents in the intervention and control group. Most of the respondents in the intervention group were aged between 40-59 years old (70%), women (80%), had primary school as the highest education (40%), and being hospitalized for the first time (55%). Whereas, age of the respondents in the control group were equally distributed between 40-59 and 60-79 years old. Most of the respondents in the control group were female (60%), had primary school as the highest education (50%), and being hospitalized for the second time (50%).

Table 1: Characteristics of respondents based on age, gender, latest education, hospital admission experience with the same disease

Characteristics of Respondents	Intervention Group		Control Group	
	n	Percentage	n	Percentage
Age				
40-59 Years	14	70.0	10	50.0
60-79 Years	6	30.0	10	50.0
Sex				
Female	16	80.0	12	60.0
Male	4	20.0	8	40.0
Education				
Elementary	8	40.0	10	50.0
Junior High School	4	20.0	7	35.0
Senior High School	6	30.0	2	10.0
Undergraduate	2	10.0	1	5.0
Experience of being hospitalized with the same disease				
Once	11	55.0	5	25.0
Twice	5	25.0	10	50.0
3 Times	2	10.0	2	10.0
More than 3 Times	2	10.0	3	15.0

Table 2 shows that there was an effect of discharge planning model with METHOD approach on patients' readiness behavior to go home. The mean rank value among the intervention group was 27.75, while among the control group was 13.25. The Mann-Whitney test results showed p value = 0.000 (p < 0.05). The results showed that the intervention group which was implemented with the METHOD approach as the discharge planning format, had a greater influence on the patients' readiness behavior to go home compared to the control group. It was concluded that statistically there were significant differences in the patients' readiness between the intervention group and the control group.

Table 2: Effect of discharge planning with the METHOD approach on the patients' readiness behavior to go home

	Group	N	Median (Min-Max)	p value
Patients' readiness behavior to go home	Intervention	20	93 (75-100)	0.000
	Control	20	75 (70-93)	
Mann-Whitney Test. *Mean rank* intervention group= 27.75; control group=13.25				

DISCUSSIONS

The implementation of the discharge planning model with the METHOD approach causes the patients to have a good readiness behavior in facing repatriation. The implementation of discharge planning with the METHOD approach was carried out since the patient was hospitalized. The discharge planning model with the METHOD approach contributed to the patients' willingness to go home. The METHOD aspects can provide an overview to the patients and families about drugs given. They also gave a good environment for patients, therapies and exercises necessary for patients' health, information on re-control and service in the community and diet [3].

The discharge planning helped the transition process of patients from one environment to another. The process can be seen with several indicators. Indicators of the results obtained should be aimed at the success of the patients' discharge planning, namely: (a) patients and families understand the diagnosis, anticipate the level of function, medication and treatment measures after the patients go home, advanced nursing, and the response taken in the emergency condition, (b) special education is given to patients and families to ensure proper care after the patients go home, (c) support systems in the community are coordinated to enable patients to go back to their homes, help patients and families coping with changes in the patients' health status, (d) conduct patients' relocation and coordination of support systems or move patients to other health services.

Discharge planning is a systematic process that is aimed to prepare patients to leave the hospital to continue ongoing care programs at home or with community care [4]. According to Almborg, [5] giving discharge planning before being discharged can improve patients' progress, and help patients achieve optimum quality of life. Patients who are not ready to face repatriation tend to return to the hospital (readmission), die or return to the emergency room within 30 days after discharge. The factors that caused unpreparedness of patients are lack of knowledge, low quality of service, low provision of health education and persistent symptoms [6]. According to Harrison, unpreparedness of patients in facing repatriation was due to lack of treatment plans and daily activities to be carried out at home [7].

The strategies that can improve patients' readiness to go home and patients' health are language use, use of leaflets or pictures. These are done to increase understanding, limit the provision of health information at one time, repeat instructions, use the teach back method, and have a respectful and sensitive attitude towards patient needs. [8] A simple strategy that can be implemented in a hospital is to improve repatriation planning. By developing a flexible planning that provides relevant information to anticipate future needs, it also tends to increase discharge planning and reduce long-term needs that are not met. [9]

The discharge planning was successful in improving patients' readiness in facing repatriation. It was a form of professional work from nurses because the implementation of good discharge planning was the duty of nurses. They played an important role in providing understanding and knowledge to patients and increasing patients' motivation to undergo the

optimal rehabilitation process. The patients' readiness to go home is an indicator of the success of discharge planning. Knowledge, understanding and skills of nurses in carrying out discharge planning affected the patients' readiness behavior to go home because nurses were educational providers and people who accompanied patients for 24 hours. Therefore, nurses were required to provide information needed by patients. Patients' readiness behavior to go home cannot be formed in a short time with short education. When individuals did not understand the health information, the consequences did not only affect the patients' perceived readiness for discharge, but can also lead to worse health outcomes, dissatisfaction, and medical errors. [10]

The level of readiness and awareness of patients and families in the involvement of patient care was an important factor in the discharge planning process. All things beyond the capacity of patients were the responsibility of health workers to communicate to be understood by patients or families. Communicating health information could be a challenge because health workers had to share complex information and included a lot of contents. The characteristics of patients with unique linguistic preferences, skills, cultural, physical and cognitive differences were related to changes in age, disability, and emotions. All these could influence the process of receiving education[11].

Less communication occurred in situations when health workers were in a hurry or patients were afraid, sick, and/or in various matters related to their disease problems. Combining the readiness scale of patients back into the discharge planning process can add alternatives to assess the risk of readmission events. This could be done by better identifying related characteristics of patients who tend to affect their ability to be involved in self-management at home. [12] The ability included symptoms reported, contacts that can be contacted, and control time [13].

The discharge planning implementation was carried out immediately when the patient was hospitalized. This could be one of the factors to improve the patients' readiness behavior to go home. Besides that, there were benefits obtained from the process of involvement and good coordination between nurses and patients in the planning activities. Ensuring that all patients understand and maintain actions for advanced home care was an important step in improving the patient's experience

and reducing the incidence of readmission [4]. The discharge planning was needed by patients to ensure the smooth process of transferring patients from hospital to another environment. This was done so that the care provided while in the patients were in the hospital can be sustainable. The main key in the discharge planning process was communication between nurses and patients/families in health education during the process. This would facilitate patients in receiving or understanding the instructions given while at home, so that the patients were able to independently maintain or improve their health.

CONCLUSION

The discharge planning implementation in Indonesia hospitals was still not effectively applied in the field as shown by the lack of patients' readiness to go home. The discharge planning model available in the hospital was complete, but the education aspect has not been planned and explained in detail to the patients. The intervention group that applied the discharge planning model with the METHOD approach had a greater influence on the patients' readiness behavior to go home compared to the control group. It was concluded that there were significant differences in the patients' readiness behavior to go home between the intervention group and the control group.

Recommendation: The METHOD approach can be used as an alternative to carry out discharge planning in hospitals, which focuses on the planning, implementation and evaluation stages.

Relevance of the study: Research findings have highlighted the problem of discharge planning whereby discharged patients were not well informed before they go home, so the incidence of recurrence is frequent.

ACKNOWLEDGMENT

REFERENCES

1. Lerret SM, Weiss ME, Stendahl GL, Chapman S, Menendez J, Williams L, et al. Pediatric Solid Organ Transplant Recipients: Transition to Home and Chronic Illness Care. Pediatr Transplant. 2015;19(1):118-29.

2. Abbeduto L, Hesketh LJ. Pragmatic Development in Individuals with Mental Retardation: Learning to Use Language in Social Interactions. Mental Retardation and Developmental Disabilities Research Reviews. 1997;3(4):323-33.

3. Timby BK. Fundamental Nursing Skills and Concepts: Lippincott Williams & Wilkins; 2009.

4. Yosafianti V, Alfiyanti D, editors. Pengaruh Pendidikan Kesehatan Persiapan Pasien Pulang Terhadap Kepuasan Pasien Tentang Pelayanan Keperawatan di RS Romani Semarang. Prosiding Seminar Nasional & Internasional 2010.

5. Almborg AH, Ulander K, Thulin A, Berg S. Discharged after Stroke–Important Factors for Health-Related Quality of Life. Journal of Clinical Nursing. 2010;19(15-16):2196-206.

6. Lau D, Padwal RS, Majumdar SR, Pederson JL, Belga S, Kahlon S, et al. Patient-Reported Discharge Readiness and 30-Day Risk of Readmission or Death: A Prospective Cohort Study. Am J Med. 2016;129(1):89-95.

7. Harrison JD, Greysen RS, Jacolbia R, Nguyen A, Auerbach AD. Not Ready, Not Set...Discharge: Patient-Reported Barriers to Discharge Readiness at an Academic Medical Center. J Hosp Med. 2016;11(9):610-4.

8. Reddick B, Holland C. Reinforcing Discharge Education and Planning. Nursing management. 2015;46(5):10-4.

9. Andrew NE, Busingye D, Lannin NA, Kilkenny MF, Cadilhac DA. The Quality of Discharge Care Planning in Acute Stroke Care: Influencing Factors and Association with Postdischarge Outcomes. Journal of Stroke and Cerebrovascular Diseases. 2018;27(3):583-90.

10. Rockville M, Maurer M, Dardess P, Carman KL, Frazier K, Smeeding L. Guide to Patient and Family Engagement: Environmental Scan Report. Rockville, MD, Agency for Healthcare Research and Quality; 2012.

11. Knier S, Stichler JF, Ferber L, Catterall K. Patients' Perceptions of the Quality of Discharge Teaching and Readiness for Discharge. Rehabil Nurs. 2015;40(1):30-9.

12. Wallace AS, Perkhounkova Y, Bohr NL, Chung SJ. Readiness for Hospital Discharge, Health Literacy, and Social Living Status. Clinical Nursing Research. 2016;25(5):494-511.

13. Howard-Anderson J, Busuttil A, Lonowski S, Vangala S, Afsar-Manesh N. From Discharge to Readmission: Understanding the Process from the Patient Perspective. J Hosp Med. 2016;11(6):407-12.

Study of Patients' Characteristics Getting Treated at Muhammadiyah Hospitals in East Java

Abdul Aziz Alimul hidayat[1], Sukadiono [2], Musrifatul Uliyah[3], Enniq Mazayudha[4]

[1,3] Departement of Nursing, University of Muhammadiyah Surabaya, 60113, Indonesia
[2,] Faculty of Medicine, University of Muhammadiyah Surabaya, 60113, Indonesia
[4,] Nurse, Muhammadiyah Hospital of Surabaya, 60113, Indonesia

Correspondence Author: Abdul Aziz Alimul Hidayat
University of Muhammadiyah Surabaya
Jl. Sutorejo No. 59 Surabaya, 60113 Indonesia.
Email. azizhidayat@um-surabaya.ac.id

ABSTRACT

Background: Patients' characteristics can predict the type of services provided by hospitals. Furthermore, the quality of hospital services can be developed and be satisfactorily made available based on the needs of patients.

Aim: This research described the characteristics of patients entering Muhammadiyah hospitals in East Java province, Indonesia.

Method: This research used a simple random sampling survey design. The sample consisted of patients who were hospitalized for the first time. The survey was conducted using a structured questionnaire administered to 531 patients. Data were collected from August-September 2019. The data was collected using interviews, questionnaires and observations. Analysis on the descriptive statistics in this paper was performed by using the Statistical Package for Social Sciences (SPSS) software.

Results: The results showed that the highest number of respondents were female (52.5%), most pediatric patients were less than 10 years old (28.2%), most respondents had junior high and high school education (40.1%), most patient were treated between 5-10 days (59.9%), most patient possessed the Indonesian National Health Insurance (62.1%), and most were diagnosed with acute gastroenteritis (14.1%), followed by diabetes mellitus (9.04%) and typhoid fever (8.47%).

Conclusion: Socio-demographic characteristics, length of treatment, and medical diagnosis of patients can help to estimate the need for health services to be made available by hospitals.

INTRODUCTION

Patient services are activities carried out to meet the needs, desires and expectations of patients. If the services received are in accordance with patient expectations, it means that the services are satisfactory. It is important to identify the needs and wants of patients in order to satisfy them. Their needs and expectations can be identified by looking at the characteristics of each patient, ranging from gender, age, length of stay, level of education, and medical diagnosis.

Hospitals as health service institutions need to understand the characteristics of patients to facilitate decision making related to hospital services so that the services provided are in accordance with the needs and desires of the community in general and patients in particular. An increase in the number of patient visits from time to time can also be influenced by various factors, one of which is satisfaction obtained by the patients which is very much related to the assessment of the perceived results (services received) against the expected. Some studies show patient characteristics can influence nursing services, but not all patient characteristics affect service satisfaction. Hidayati et al. showed that characteristics such as age groups, sex, education, and income have no relationship with service satisfaction in outpatient care[1]. This is different from Meryani et al. who stated that there is a relationship between patient characteristics and satisfaction with nursing services, but not for all related characteristics such as age[2]. Based on this, this research analyzed the characteristics of patients who were first treated at Muhammadiyah hospitals, East Java province, Indonesia.

METHOD

This research used a survey design. The research was conducted from August to September 2019 in Muhammadiyah hospitals in East Java, Indonesia. The number of respondents surveyed was 531 patients treated at Muhammadiyah hospitals in 4 randomly selected districts out of 17 districts that have Muhammadiyah hospitals. The first stage involved random sampling from 4 districts out of 17 districts with Muhammadiyah hospitals. The second phase involved selecting 531 patients from selected districts. The number of patients selected was proportional to the number of patients in the hospitals in the selected district[3, 4]. Face-to-face interviews using paper questionnaires were conducted to collect data[5-7] The main target of respondents were patients being treated in the hospitals. Fieldwork was carried out by a team of local surveyors who were trained to ensure that respondents understand the questions asked. Data collected were entered into Excel. Raw data was refined by correcting various incorrect inputs. Analysis on the descriptive statistics was performed by using the Statistical Package for Social Sciences (SPSS) software.

RESULTS

Table 1 shows that the highest number of respondents were female (52.5%), most pediatric patients were less than 10 years old (28.2%), most respondents had junior

high and high school education (40.1%), most patient were treated between 5-10 days (59.9%), most patient possessed the Indonesian National Health Insurance (62.1%), and most were diagnosed with acute gastroenteritis (14.1%), followed by diabetes mellitus (9.04%) and typhoid fever (8.47%).

Table 1. Patient socio demographic characteristics (N = 531)

Variable	Category	Count	Percentage
Gender	Male	252	47.5
	Female	279	52.5
Age (year)	<10	50	28.2
	11-20	9	5.08
	21-30	23	13
	31-40	18	10.2
	41-50	13	7, 34
	51-60	28	15.8
	> 60	36	20.3
Level of education	Never	150	28.2
	Primary school	99	18.6
	Junior / senior high school	213	40.1
	University	69	13
Length of stay	<5 day	195	36.7
	5-10 day	318	59.9
	> 10 day	18	3.39
Indonesian National Health Insurance status	Yes	330	62.1
	No	201	37.9
Ward	Medical	240	45.2
	Surgical	39	7,34
	Maternity	42	7.91
	Pediatrician	150	28.2
	Intensive Care Unit	30	5.65
Medical diagnosis	Acute appendicitis	3	0.56
	Acute gastroenteritis	75	14.1
	Anemia	15	2.82
	Angina pectoris	3	0.56
	Atrial fibrillation	6	1.13
	Bacterial infections	9	1.69
	Benign prostatic hyperplasia	3	0.56
	Breast cancer	6	1.13
	Bronchial asthma	3	0.56
	Bronchitis	6	1.13
	Bronchopneumonia	12	2.26
	Cardiogenic shock	6	1,13
	Cerebrovascular accident	18	3.39
	Chronic kidney disease	12	2.26
	Chronic Obstructive Pulmonary Disease	3	0.56
	Clavicle Fracture	3	0.56
	Contusio cerebri	9	1.69
	Coronary Artery Disease	3	0.56
	Cushing's syndrome	3	0.56
	Cystitis	3	0.56
	Decompensatio cordis	18	3.39
	Dengue Hemorrhagic Fever	12	2.26
	Diabetes Mellitus	48	9.04
	Dyspepsia	33	6.21
	Eclampsia	3	0.56
	Epilepsia.	3	0.56
	Erythroderma	3	0.56
	Febrile convulsion	3	0.56
	Febris	24	4,52

Variable	Category	Count	Percentage
	Femoral fracture	3	0.56
	Hematemesis	3	0.56
	Hepatic cirrhosis	3	0.56
	Hepatitis	6	1.13
	Hydronephrosis	3	0.56
	Hyperemesis gravidarum	9	1.69
	Hypertension	3	0.56
	Humerus fracture	3	0.56
	Hypoglycemia	3	0.56
	Intertrochanteric fractures	3	0.56
	Laparotomy	3	0.56
	Meningoencephalitis	3	0.56
	Oligohydramnios	3	0.56
	Phalanx fractures	6	1.13
	Postpartum	15	2, 82
	Preeclampsia	3	0.56
	Pulmonary contusion	3	0.56
	Renal colic	6	1.13
	Sectio caesura	3	0.56
	Septic shock	6	1.13
	Struma multi nodusa	3	0.56
	Typhoid fever	45	8.47
	Tuberculosis	3	0.56
	Unstable angina	6	1.13
	Urinary tract infection	3	0.56
	Varicella	3	0.56
	Vertigo	21	3.95
	Viral infection	3	0.56
	Vomiting	3	0.56

DISCUSSION

Nursing services can be seen from three dimensions, such as accessibility which refers to ease of interaction and contact between patients and nurses. Another dimension is communication skills involving how information can be easily understood by patients, nurses' listening, questioning skills and responding to customers, and lastly understanding the customer namely nurses' ability to assess and understand patient needs. Several characteristics help to understand patients' background, such as age, sex, education, care, education and medical diagnosis[8-10].

Age may affect the level of satisfaction, where adult patients tended to feel more satisfied because they usually received more responsive care. Age also affect the availability of services since most services are utilized by patients who are of productive age. The high number of respondents in this productive age group may be due to the fact that they are more prone to illness and disease, and they require more medical attention [11, 12]

Patient education can determine their general assessment and outlook on health services and including information about diseases. People who are more educated tend to have higher demand for health services, because they pay more attention to their health. Awareness of the importance of health is more pronounced among respondents with high school education thus they demand more health services. The need to remain productive can affect the demand and the level of satisfaction of health services especially by workers.

The level of satisfaction with health services can be affected by gender. Women tend to demand for more health services due to their nature, being more sensitive and requiring more attention. Furthermore, women as part of the workforce tend to require more medical services since they are more susceptible to disease, especially diseases that only affected women.

Several studies supported the results, Hayuningsih and Mutika stated that there is a meaningful relationship between education, work, and patient satisfaction (tangibles aspects) and antenatal care services [13]. Likewise, Utami stated that education and employment status can affect service quality, as opposed to gender, age and income which do not affect service [14]. Meanwhile, Mulyani stated that there is no relationship between sexes, education, occupation, but there existed a relationship in term of age [15]. Various theories also relate proneness to disease and illnesses to internal factors originating in the patient's body, such as age, sex, and history of disease [16-18].

CONCLUSION

Socio-demographic characteristics, length of treatment, and medical diagnosis of patients can help to estimate the need for health services to be made available as well as shaping the model or form of health services provided by hospitals

ACKNOWLEDGEMENTS

CONFLICT OF INTEREST

The authors have no conflicts of interests to declare.

REFERENCES

1. Hidayati, A. N., Suryawati, C., & Sriatmi, A. (2014). Analisis Hubungan Karakteristik Pasien dengan Kepuasan Pelayanan Rawat Jalan Semarang Eye Center (SEC) Rumah Sakit Islam Sultan Agung Semarang. *Jurnal Kesehatan Masyarakat (e-Journal)*, *2*(1), 9-14.

2. Oroh, M. E., Rompas, S., & Pondaag, L. (2014). Faktor-faktor yang berhubungan dengan tingkat kepuasan pasien rawat inap terhadap pelayanan keperawatan di ruang interna RSUD Noongan. *Jurnal Keperawatan*, *2*(2).

3. MPKU. Data Rumah Sakit Muhammadiyah-Aisyiyah: Majelis Pembina Kesehatan Umum. (2016). [Available from: https://www.mpku.or.id.

4. Gani, A. (1996). Improving quality in public sector hospitals in Indonesia. *The International journal of health planning and management*, *11*(3), 275-296. https://doi.org/10.1002/(SICI)1099-1751(199607)11:3%3C275::AID-HPM436%3E3.0.CO;2-C

5. Castle, N. G., Brown, J., Hepner, K. A., & Hays, R. D. (2005). Review of the literature on survey instruments used to collect data on hospital patients' perceptions of care. *Health services research*, *40*(6p2), 1996-2017. https://doi.org/10.1111/j.1475-6773.2005.00475.x

6. Vera-Catalán, T., Gallego-Gómez, J. I., Rivera-Caravaca, J. M., Segura-Melgarejo, F., Rodríguez-González-Moro, M. T., & Simonelli-Muñoz, A. J. (2019). A new tool to assess patients' comfort during hospitalization: The Hospital Discomfort Risk questionnaire. *Journal of nursing management*, *27*(7), 1485-1491. https://doi.org/10.1111/jonm.12834

7. Webster, T. R., Mantopoulos, J., Jackson, E., Cole-Lewis, H., Kidane, L., Kebede, S., ... & Bradley, E. H. (2011). A brief questionnaire for assessing patient healthcare experiences in low-income settings. *International Journal for Quality in Health Care*, *23*(3), 258-268. https://doi.org/10.1093/intqhc/mzr019

8. Faried, A., Putra, S. P., Suradji, E. W., Akbar, R. R., Nugraheni, N. K., & Arifin, M. Z. (2020). Characteristics and outcomes of pediatric tuberculous meningitis patients with complicated by hydrocephalus with or without tuberculoma at Regional Public Hospital Teluk Bintuni, West Papua, Indonesia. *Interdisciplinary Neurosurgery*, *19*, 100609. https://doi.org/10.1016/j.inat.2019.100609

9. Rahman, S. G. A., Fajri, N. N., Imran, I., Lestari, N. N. D., Hastuti, S. S., Fajri, L. L., ... & Khatab, K. (2019). Baseline characteristics of embolic strokes patients in the Dr. Zainoel Abidin Hospital Banda Aceh, Indonesia. *Journal of the Neurological Sciences*, *405*, 71-72. https://doi.org/10.1016/j.jns.2019.10.561

10. Putri, N. D., Wiyatno, A., Dhenni, R., Sriyani, I. Y., Dewantari, A. K., Handryastuti, S., ... & Prayitno, A. (2019). Birth prevalence and characteristics of congenital cytomegalovirus infection in an urban birth cohort, Jakarta, Indonesia. *International Journal of Infectious Diseases*, *86*, 31-39. https://doi.org/10.1016/j.ijid.2019.06.009

11. Saputra, F., Yunibhand, J., & Sukratul, S. (2017). Relationship between personal, maternal, and familial factors with mental health problems in school-aged children in Aceh province, Indonesia. *Asian journal of psychiatry*, *25*, 207-212. https://doi.org/10.1016/j.ajp.2016.10.025

12. Vargese, S. S., Mathew, E., Johny, V., Kurian, N., & Raju, A. S. (2020). Prevalence and pattern of multimorbidity among adults in a primary care rural setting. *Clinical Epidemiology and Global Health*, *8*(2), 482-485. https://doi.org/10.1016/j.cegh.2019.10.014

13. Hayuningsih, S., & Mutika, W. T. (2018). Hubungan antara karakteristik pasien terhadap kepuasan pasien (aspek tangibles) pada pelayanan antenatal care di rumah bersalin citra lestari Pabuaran Bojonggede Bogor Jawa Barat. *Berita Kedokteran Masyarakat*, *34*(5), 7-2. https://doi.org/10.22146/bkm.35656

14. Utami, Y. T. (2018). Pengaruh Karakteristik Pasien Terhadap Kualitas Pelayanan Rawat Jalan Di Uptd Puskesmas Penumping Surakarta. *INFOKES Journal*, *8*(1).

15. Mulyani, R. (2017). Hubungan Karakteristik Pasien Dengan Kepuasan Pelayanan Gizi Di Ruang Rawat Inap Rumah Sakit. *Jurnal Ilmiah Keperawatan Sai Betik*, *10*(2), 231-239. http://dx.doi.org/10.26630/jkep.v10i2.280

16. Chen, S., Lenhart, S., Day, J. D., Lee, C., Dulin, M., & Lanzas, C. (2018). Pathogen transfer through environment–host contact: an agent-based queueing theoretic framework. *Mathematical medicine and biology: a journal of the IMA*, *35*(3), 409-425. https://doi.org/10.1093/imammb/dqx014

17. Galea, S., & Link, B. G. (2013). Six paths for the future of social epidemiology. *American Journal of Epidemiology*, *178*(6), 843-849. https://doi.org/10.1093/aje/kwt148

18. Foxman, B., & Rosenthal, M. (2013). Implications of the human microbiome project for epidemiology. *American journal of epidemiology*, *177*(3), 197-201. https://doi.org/10.1093/aje/kws449