Relationship of Payment System, Waiting Time, and Officer Level Competency toward Inpatient Satisfaction

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Complaint about the mismatch of waiting time for inpatients in the payment system is one of the Abstract: dissatisfaction factors. The rate of patient dissatisfaction with payment waiting times in Indonesia in 2017 reached an average of 52%. The purpose of this study was to identify the relationship of parameters; payment system, payment waiting time, and staff competence with inpatient satisfaction. The study was conducted in the form of analytic studies through a cross sectional approach with a population of 1,001 respondents and a sample of 261 respondents. The research instrument was a questionnaire in accordance with the studied variables, and validity and reliability were tested at Sarah General Hospital. Data were evaluate using univariate and bivariate methods with the chi-squared test, and multivariate with multiple logistic regression at a 95% confidence level ($\alpha = 0.05$). The results showed that patients who were dissatisfied 19.9%, said the payment system was very good (29.1%), the waiting time between 61-90 minutes (30.3%) was still according to the standard i.e. <2 hours, the competency of the officers which is very good at around 40.6%. The parameters tested were related to inpatient satisfaction, with a p - value < 0,000. The most dominant variable related to patient satisfaction was the competency of officers with a value of Exp (B) / OR = 9,941 by mean that patients who state competency in the good category have a 9.9 times higher chance of being satisfied compared to patients who state the competency of officers was not good.

1 INTRODUCTION

The hospital is one of the health service facilities that were built to provide treatment to the community with the aim of improving human health. Increased public awareness of health, will lead to demands for increased health services. One effort to anticipate this situation is by maintaining the quality of service to increase patient satisfaction (Azwar, 2016).

Patient satisfaction is a major factor and is a measure of success as a result of the services provided to customers (Tjiptono and Chandra, 2015). Patient satisfaction affects the organization that health service providers are required to improve overall performance (Khunwuthikorn, 2011). Patient satisfaction is a very important component for service in the hospital and the higher level of patient satisfaction will increase the number of patient who are loyal to the hospital so that it indirectly increases the operating income of the hospital (Indah, 2019).

One of the patient satisfaction's indicators in hospital is administrative services such as the payment system (billing system) (Erwan, 2015). Inpatient dissatisfaction in the waiting time for payment in Indonesia averages 52% (Oktamianiza and Rahmi, 2019). Based on Kepmenkes No. 129 of 2008 concerning Minimum Service Standards, the time delivery of information about inpatient bills is \leq 2 hours (MOH RI, 2008).

The long waiting time can result in patient dissatisfaction. Susanti, Meliala and Kusmedi's research (2017) at Tarakan Hospital, Jakarta, shows that there is an influence of payment duration and satisfaction of inpatients.

The essence of a high level of patient dissatisfaction with care and payment systems in a hospital is a lack of trust (Shan et al., 2016). The attitude of hospital staff played an important role in providing health services to patients and could affect and even reduce the patient satisfaction rate (Fenny, Enemark, Asante, Hansen, 2014). The overall treatment outcome, as the most dominant predictor, was followed by the kindness of the nurse. Items that reflect received information about the details of the care under taken have a major influence on patient

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satisfaction (Schoenfelder, Klewer and Kugler, 2017).

Research by Tangcharoensathien et al. (2019) shows that patients whom settle the billing themselves at normal rates are more satisfied than those whom settle the billing using social security. Patients who use social security in Thai hospitals do not get enough attention when consulting a doctor. Quynh and Dhar's research (2014) shows that patients who pay using insurance are completely dissatisfied with health care procedures, especially during registration and consultation.

The problem often faced by hospitals is that they have not been able to provide services with service standards, applicable laws and regulations. Various efforts can be made to improve patient satisfaction with hospital services, namely (1) at the individual level, each health professional increases professional skills, communication and empathy skills for patients, applying medical standards and the ethics of the medical profession in daily practice, (2) at the institutional level, hospitals prioritize patient safety and security, support resources in hospital operations, provide manageable workloads to employees, provide skills and accountability remuneration, and improve hospital administration systems with an innovative approach, (3) at the national level, the level of improvement needed in health system policies both in terms of benefits and equality in obtaining health services for people registered as users of social security (Woldeyohanes et al., 2015; Shan et al., 2016; Nkwinda et al , 2018; Salesman, et al, 2018). The government must also ensure that all health facilities, particularly hospitals, comply with laws and guidelines for national health insurance through regular monitoring, evaluation and maintenance of service quality (Daramola et al, 2018; Turnip et al, 2020; Wijaya et al, 2019).

From a number of previous studies: Patient satisfaction is a major factor and is a measure of success as a result of the provided services to customers (Tjiptono and Chandra, 2015); Patient satisfaction with services in a hospitals is an administrative services in the form of a payment system (billing system) (Erwan, 2015); The long waiting time can result in patient dissatisfaction Susanti, Meliala and Kusmedi's research (2017); The essence of the high level of patient dissatisfaction with care and payment systems in a hospitals is a lack of trust (Shan et al., 2016). Based on various previous studies, there has been no specific research linking the parameters of the length of waiting time for an inpatient, the payment system and the competence of staff towards patient satisfaction.

2 METOD

This research was conducted at the Stella Maris Women's and Children's Hospital in Medan in November 2019. The study population was all inpatients going home about 1,001 patients with a sample of 261 respondents. Characteristics of the selected respondents were shown in Table 1.

Table 1: Respondent Characteristic Frequency Distribution
2019.

	Characteristic	Total		
	Characteristic	f	%	
Age:				
a.	<43 years	153	58.6	
b.	≥43 years	108	41.4	
Total		261	100.0	
Gende	r:			
a.	Men	91	34.9	
b.	Women	170	65.1	
Total		261	100.0	
Educa	tion:			
a.	High School	51	19.5	
b.	Diploma	81	31.0	
c.	Undergraduate	129	49.5	
Total		261	100.0	
Occup	ation:			
a.	Housewife	111	42.5	
b.	Government	30	11.5	
Officia	al	33	12.6	
c.	Private Official	87	33.4	
d.	Entrepreneur	07	JJ.T	
Total		261	100.0	

The used instrument was a questionnaire that had been tested for validity and reliability at Sarah General Hospital with a sample of 30 respondents. The results were all valid and the instrument items were positively and significantly correlated, i.e. the rcount value was greater than 0.361 Corrected Indicator – Total Correlation value (Ghozali, 2015). As well as reliability test with all results greater than the value of the 0.6 limit of Cronbach's Alpha, by means that the questionnaire information can be trusted and declared reliable or consistent.

Data collection was then carried out by distributing questionnaires to the 261 in-patients who were about to discharged after medical treatments. Data analysis was performed by means of univariate method, bivariate method using the chi-square test, and multivariate method using multiple logistic regression tests with a confidence level of 95% ($\alpha = 0.05$). In summary, the reseach process scheme is shown in Figure 1.



Figure 1: The Scheme of Research Process.

3 RESULTS AND DISCUSSION

Based on the measurement results of the overall data from 261 respondents who willing to participate in the survey and filled out the questionnaires, it showed that the average value of the payment system was around 6.3, the waiting time was around 70.2 minutes, the competency of the officers was around 6.6 and the patient satisfaction was around 29.2. The detailed data for each variable are: (i) Payment systems with maximum and minimum scores obtained from respondents were 10 and 1, respectively, and an average value of around 6.3 out of 10. These values can be interpreted that there are respondents who experienced the payment system was very good, also some still perceived it is not good, but on average respondent feel good about the integrated payment system and clarity in item charged during treatment in the hospital. (ii) The longest payment time was 145 minutes and the fastest time was 30 minutes which in the average payment time was 70.2 minutes. The majority of respondents assess the type of payment factor (self funded or insurance) affect the length of time of payment. Insurance payment method has a longer waiting time compare to the self funded because the insurance payment method requires more administrative paperwork to be filled in for their assessment of patient's policy coverage. The insurance's verifier will audit the billing before issued final guarantee letter if all billing was covered or partially covered. (iii) The maximum score of officers competency was about 10 and a minimum score was 2. The average score was 6.6 out of 10, where the friendly, polite, responsive, good interpersonal skill and communicable officers were considered good and who lack of technical skill in explaining the breakdown of the expenses considered to be lack of professionalism because the officers had to ask the nurse when patient need more information about the item charged in the billing statement. (iv) the patient satisfaction with a maximum value by respondents was approximately 38 with a minimum value of around 17. The average value of patient satisfaction is 29.2 out of 40. The majority assesses how officers mannered, behaved and communicate was considered as factors that influence respondent satisfaction. The measured data distribution for independent and dependent variables can be seen in Figure 2.



Figure 2: Measured data distribution for independent and dependent variables of 261 respondents.

Based on univariate analysis of the questionnaire data, it was found that the payment system with very good assessment was around 29.1%, the waiting time between 61-90 minutes was around 30.3% (average value of 70.2 minutes), the officer competency with very good assessment was around 40.6%, the satisfied patients were 80.1%, and the unsatisfied patients were 19.9% (Table 2).

Table 2: Variable Frequency Distribution (n=261).

Variables	Quantity			
variables	n	%		
Payment System:				
Very Good	76	29.1		
Good	70	26.8		
Average	72	27.6		
Deficient	28	10.7		
Poor	15	5.7		
Payment Waiting Time				
(minutes):				
\leq 30	28	10.7		
31 - 60	67	25.7		
61 - 90	79	30.3		
91 - 120	35	13.4		
\geq 120	52	19.9		
Officers Competency:				
Very Good	106	40.6		
Good	95	36.4		
Average	22	8.4		
Deficient	26	10.0		
Poor	12	4.6		
Patient Satisfaction:				
Satisfied	209	80.1		
Not Satisfied	52	19.9		

Based on bivariate analysis, all independent variables were found to be significantly related to patient satisfaction (p-value ≤ 0.05), namely the payment system (billing) (p = 0.003), the payment waiting time of (p = 0.012), and the officers competency of (p = 0,000). The details Chi-Square statistical test results can be seen in Table3.

Table	3:	The	Relationship	of	Each	Independent	and
Depen	den	t Vari	able				

		Patient	satisfaction Quantity					
Variables	Satisfied		Not satisfied		Quantity			
	n %		n %		N %		p-value	
Payment System:								
Very good Good Average Deficient Poor	76 68 62 3 0	100,0 97,1 86,1 10,7 0,0	0 2 10 25 15	0,0 2,9 13,9 89,3 100,0	76 70 72 28 15	100,0 100,0 100,0 100,0 100,0	0,003	
Payment Waiting Time (minutes): ≤ 30 31 - 60 61 - 90 91 - 120 ≥ 120	28 62 43 24 52	100,0 92,5 82,7 68,5 65,8	0 5 9 11 27	0,0 7,5 17,3 31.5 34,2	28 67 52 35 79	100,0 100,0 100,0 100,0 100,0	0,012	
Officer Competency:								
Very Good Good Average Deficient Poor	106 94 7 2 0	100,0 98,9 31,8 7,7 0,0	0 1 15 24 12	0,0 1,1 68,2 92,3 100,0	106 95 22 26 12	100,0 100,0 100,0 100,0 100,0	0,000	

The results of multivariate analysis with multiple logistic regression tests showed that of the 3 variables as model candidates which are payment system, payment waiting time and officers competency, all related to the satisfaction of inpatients returning home.

Table 4 shows the results of multiple logistic regression tests. Where B is a beta value, Sig. is significant, Exp (B) is exponential beta read as an OR (Odds ratio) value, and 95% CI for exp (B) is a 95% confidence level for beta exponential values for the upper and lower limits of the Lower and Upper. The most dominant variable related to patient satisfaction was the staff competency variable which has a value of Exp (B) / OR = 9,94 1 by means that patient who state competency in the good category have a 9.9 times higher chance of being satisfied compared to patients who state the competency of officers was not good.

Variables	В	Sig.	Exp (B)	95%CI for Exp(B)
Payment system	2,140	0,004	8,497	3,857-18,718
Waiting Time	1,588	0,014	4,893	2,151-11,132
Officers Competency	2,297	0,001	9,941	4,432-22,299
Constant	-9,831	0,000		

Table 4: Results of Multiple Logistic Regression Tests

3.1 Payment Systems

Based on the results of the study showed that there was a relationship between the payment system (billing) with patient satisfaction which states that the payment system is in the good category, has a 8.4 times higher chance of being satisfied compared to patients who claim the payment system is not good. The results of this study are in line with research conducted by Anggita (2012) in inpatients at Graha Permata Ibu Women's and Children's Hospital Bekasi that an inadequate payment system causes patients to feel less satisfied. While for patients who think that the payment system is good, they are satisfied with hospital services. Research conducted by Zulfa (2013) on patients at Puspa Husada Women's and Children's Hospital Bekasi, a hospital with fast and accurate billing payment system resulted in patients to be satisfied, while some respondents said they were dissatisfied because the hospital billing payment system was less accurate. Furthermore, Oktamianiza & Rahmi's research (2019) at Dr. Rasidin State General Hospital Padang found dissatisfaction in the inpatient's payment system because the payment system was still manually recorded. Susanti, Meliala and Kusmedi's research (2017) at Tarakan Hospital Jakarta found that since they change the implementation of the billing system, it has increased the level of customer satisfaction.

According to the results of this study it prove that the payment system has made 72% of patients feel satisfied by stating that the payment system used was good, while 28% of respondents stated that the payment system was still not good, which means it still needs to be reviewed and improved so that it can satisfy all respondents or patients. For respondents who were satisfied, stated that the payment system was quickly carried out, the data was integrated in detail, and all expenses were clearly stated.

Patients feel that the payment system was not good because the inpatient billing payment system was felt to be less professional because whenever the patient asked about the billing estimation, the system cannot generate the real time data. The officer had to coordinate with the nurse, pharmacy or other unit to updating the data before informing the patient the current billing. In addition, the payment system was considered to be inadequate because the inpatient billing payment system must wait for reports from related unit, thus it was time consuming and resulted in increases the waiting time. Some respondents also stated that the expenses were not clearly stated, causing them to assume that the payment system was inadequate or still need to be improved in such that the payment system could be better and be able to satisfy all patients.

Another patient dissatisfaction related to the payment system is the Electronic Data Capture (EDC) of banks which often experience disruptions thus caused delay in the payment system process.

3.2 Payment Waiting Time

Based on the study results showed that there was a relationship between the payments waiting time with inpatient satisfaction. Patients who stated the payment duration is still appropriate (< 2 hours) had a 4.8% higher chance of being satisfied than patients who stated the payment duration was inappropriate (\geq 2 hours).

Research by Oktamianiza and Rahmi (2019) conducted in Dr. Rasidin State General Hospital Padang found that 54.8% of patients were dissatisfied with the waiting time for inpatient payments. Furthermore, Alamsyah research (2017) in the Masmitra General Hospital Bekasi that the average length of the patient's family received billing information from the cashier was 160 minutes (> 2 hours). Research by Zulfa (2018) at the Puspa Husada Women's and Children's Hospital Bekasi found there were complaints from the patient's family about the long waiting time for them to receive the billing information after medical treatments. The waiting time for the administration process was average from 2 to 2.5 hours.

The mismatch of waiting time for inpatients in the payment system was caused by the long waiting time to get billing information where in general the calculation were started once the doctor's visit and allows a patient to go home. The calculation should have been done in real time. Adequate use of information technology was a factor that can help accelerate administrative service activities. A better relationship between the hospital and the patient is a necessity in retaining customers or patients. One effort to retain customers or patients is to provide satisfaction with patients by increasing payment services once patients are allowed to go home by cutting service waiting times.

The results given from this research shows that 19.9% of patients stated that the waiting time was inappropriate in the sense of the length of time to calculate the hospital bill was more than 2 hours. This needs to be address as a concern for hospital therefore it can improve the service of payment waiting time to be less than 2 hours. The fastest time of service was 35 minutes while the longest time was 145 minutes or 2.25 hours. If observed the average waiting time of 70.2 minutes, which means more than 1 hour the patient gets hospital bill payment services, the waiting time was still in the appropriate category. The majority of respondents expressed satisfaction based on the length of the waiting time for payment of hospital bills. Payment waiting time of more than 2 hours will make patients feel less satisfied. The faster the bill payment service, the more satisfaction that is felt by the patient hence in the end it can improve the hospital image.

3.3 Officers Competency

A review of officers' competency shows that there was a relationship with inpatient satisfaction. The correspondence which stated the officer's competency is good, had a 9.9 times higher chance of being satisfied compared to patients who stated the competency of officers was not good. These results indicate that the process of completing the administration of inpatients was influenced by human resources (HR). Factors that influence patient satisfaction were officers who are less responsive in providing services for bill payment of the overall expense to be paid by patients when they want to go home

Administrative services must be professionally carried out by a competent officer and speedily processed with the aim to shorten the waiting time thus the patient or patient's family feels satisfied. Administrative services that were processed by incompetent officers and manually carried out provide obstacles to the flow of information between one unit and another, as well as the impact of the delay in information needed. The essence of a high level of patient dissatisfaction with care and payment systems in a hospital is a lack of trust (Shan et al., 2016). The attitude of hospital staff played an important role in providing health services to patients and could affect and even reduce the patient satisfaction rate (Fenny, Enemark, Asante, Hansen, 2014).

Satisfaction of inpatients also relates to the competence of administrative staff. Officer competence refers to the speed of the officers in providing administrative services, not complicated, meticulous in calculating the expenses that have been used by patients during treatment. In addition, the officer exhibit good communication skills when communicating to patient or the patient's family in informing the patient's billing. Officers must display a friendly, responsive and polite attitude to make the patient and family feel comfortable. Officers must explain in detail what expenses should be paid by the patient and family. All of these services aim to satisfy patients and families so they get a deep impression while being treated in the facility.

This study also found that some respondents stated that the officer did not explain in detail related to what the expenses listed on the bill, and usually explained the outline only. In addition, some respondents also stated that the officer's competency was not met the expectation, this was because the officers did not explain the bill in an easily understood language. There were medical consumables such as medicines that must be asked to the nurse first. Officers usually explain general things while about drugs and laboratory examinations cashiers do not well understand and must refer the question to pharmacist or laboratory analyst. Moreover patients get less satisfied when the billing statement was miscalculated. This affected the patient satisfaction in terms of trust to hospital image.

4 CONCLUSIONS

Patient satisfaction is related to the fulfilment of the expectation. The hospital as one of the health services provider is expected to provide effective and efficient services. Observing the results of the study, patients who were satisfied by 80.1%, and those who were dissatisfied with 19.9%, the majority indicate the payment system was very good (29.1%), the waiting time was still in good range of 61-90 minutes (30.3 %) or an average value of 70.2 minutes (still according to the standard i.e. <2 hours), and the officers competence was very good (40.6%). An incompetence of the officers were caused by the lack of officer's technical skill causing confusion in explaining billing details properly and must coordinate with nurses in the use of consumable medical items.

Payment system, payment duration, and staff competence were related to patient satisfaction that allowed to go home p < 0.05. The most dominant variable related to patient satisfaction was the officers competency who have an Exp (B) / OR value of 9.941 by mean that patients who state competency in the

good category have a 9.9 times higher chance of being satisfied compared to patients who state that the competency of officers was not good.

In conclusion, this study can help the hospital management to review their strategic planning in order to increase the patient satisfaction which will result in the increase in revenue. The hospital management should pay more attention in developing the human resources by increasing officer's technical skill as well as interpersonal skill to be able to deliver personalized services to patient to fulfil their expectation. With the more attentive officer, the weakness of the payment system and the long waiting time can be overcome and not affecting hospital image and can maintain patient loyalty.

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