

The Relationship of Patient Satisfaction with the Waiting Time and Fast Track Services: Structural Equation Modelling Test

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ABSTRACT

One of the factors that demand hospital services is the speed of service starting from patient registration to the process of patient discharge from the hospital after receiving service¹. The imbalance between the speed of patient arrival and the ability of service personnel to provide services is one of the factors that cause queues. The most common problem that occurs in hospitals is the length of the queue for services. One of the most common efforts is the application of a queue number (ticketing system) but it also does not break up long and long queues². Shortening waiting time is one of the most relevant criteria, not only in terms of increasing patient satisfaction but also improving hospital quality, efficiency and capacity planning³.

Methods: The method which is used in this research was a survey of 294 out-patient in interne polyclinic RS X Padang City with a cross-sectional design. Simple random sampling has been chosen to collect the respondent. Hypothesis testing was performed using Structural Equation Model with SMARTPLS 3.3.3.

Result: The waiting time construct consists of fairness of queue system, needed of the patient in a queue system, use of information technology in queue system meanwhile, fast track services measure by the need in hospital, the users of the service, and is the service is going well. General Satisfaction is measured by general satisfaction in doctor service, queue system and fast track service. The Hypothesis tested in table 2 show that has t-value from bootstrapping all the result has value above than t-table value (1,96) for significant level (α) 5%. It is mean that fast track and waiting time has a strong influence on satisfaction in general and all the hypothesis was accepted. This research also tests the accuracy prediction model which shows in the R-square value. R-square shows that fast track was affected 30,1% in waiting time meanwhile general satisfaction were only affected 7,9% with fast track and general satisfaction.

Conclusion: The research has shown that fast track and waiting time has a direct impact on patient satisfaction in the whole service. There is around 70% of other factors were affected the fast track rather than waiting time and more than 90% of other factors were affected the general satisfaction of patients while receiving the service that not mentioned in this research. The others factors that should be tested in future research was the satisfaction factor with the doctor services and nursing service.

Keywords: Fast track, outpatients, waiting time

1. INTRODUCTION

Hospitals are one of the providers of health services that are required to not only have a variety of service quantity, but are also required to maximize service quality. In its implementation, hospital services must apply services that are in accordance with applicable laws and regulations as well as demands or needs in the community⁴.

One of the factors that demand hospital services is the speed of service starting from patient registration to the process of patient discharge from the hospital after receiving service¹. The imbalance between the speed of patient arrival and the ability of service personnel to provide services is one of the factors that cause queues⁵.

The most common problem that occurs in hospitals is the length of the queue for services. One of the most common efforts is the application of a queue number (ticketing system) but it also does not break up long and long queues². Shortening waiting time is one of the most relevant criteria, not only in terms of increasing patient satisfaction but also improving hospital quality, efficiency and capacity planning. Because of this, the hospital continues to strive to develop a queuing system, especially in registration³.

The application of the queuing system is used by hospitals as a form of application of hospital accreditation standards in terms of the application of service standards for special outpatient lines for people with special needs and high risk. This system can be seen in several hospitals in Indonesia, such as H.A Sulthan Daeng Radja Hospital in South Sulawesi Province. This hospital provides fast track registration services to patients over 70 years old; Patients with disabilities/ physical disabilities/ physical weakness (coming in wheelchair or only able to lie down); Sick babies under two (2) months of age; and pregnant women with a gestational age of over 32 weeks⁴.

The preliminary survey showed that the queuing service at Hermina Padang Hospital had implemented an electronic queuing system where the first patient to come would be served first. This queuing system that is already running does not only apply at the time of patient registration, but also at the time of service at the polyclinic, at the time of supporting services such as radiology and laboratory examinations as well as at the time of taking drugs. The fast-track service that runs at the hospital is only valid at the time of patient registration, while for examinations to the polyclinic, supporting

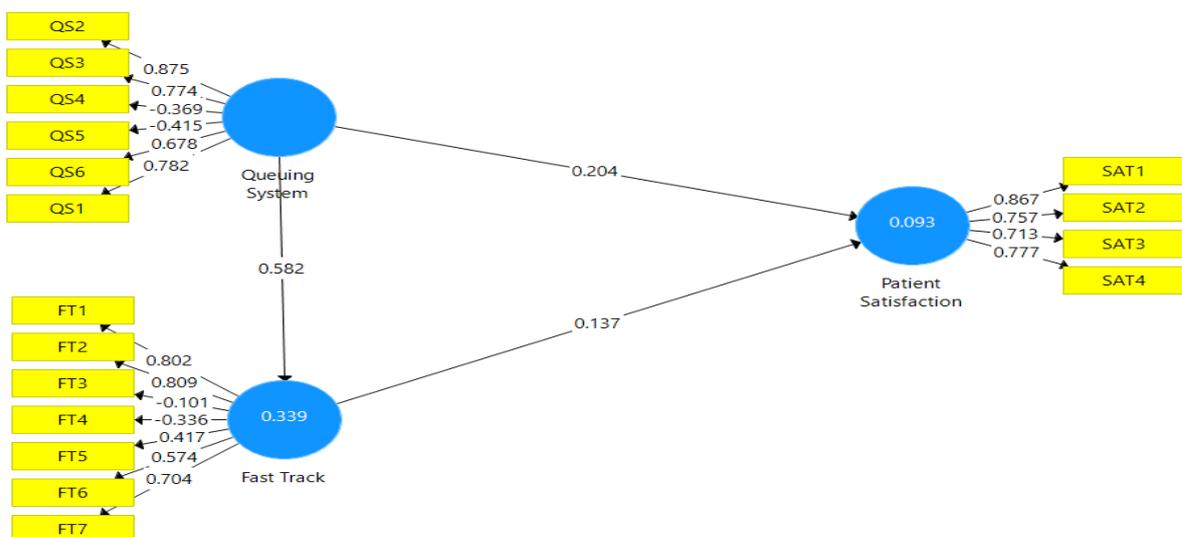
examinations and taking medication, it has not yet started. One of the problems that later emerged was the lack of socialization of this service so it still caused complaints from other patients who did not get fast track services, where patients felt injustice in service. This complaint can be seen from the contents of the criticism and suggestions box who are dissatisfied with the length of the registration service received. One of the causes of the risk is the joining of ordinary patient care places with patients with special needs and at risk.

2. METHOD

The objective of the study was to investigate a connection between queuing systems, fast track facilities and patient satisfaction in Hermina Padang Hospital. This is a cross-sectional study collected by questioner which occurred in May until July 2021. The population is outpatient, especially in interne polyclinic. The sample was collected by simple random sampling with a total of 295 outpatients has been surveying. The data were analysed using SmartPLS 3.3.3. The data were tested for factor loadings and cross-loadings. Using Cronbach's alpha, composite reliabilities and average variances were then extracted. Furthermore, the data were tested using structural models to evaluate the coefficient of determination (R²). The last step, Hypotheses was confirmed through the partial least square structural equation model (PLS-SEM).

3. RESULT

Figure 1 presents the model used in this study. Item in each variable consists of several indicators. In total there are 17 indicators has tested.



Applicating the SmartPLS the first was indicated to measure the outer model. The aim of

this measurement was to evaluate a validity and reliability instrument. The validity shown in outer

loading value, convergent validity was supported if the outer loading value was more than 0,7. The outer loading value less than 0,7 must be excluded.

Table 1 shows that indicators QS4, QS5, QS6, FT3, FT4, FT5, FT6, SAT3 must exclude because has values below 0,7. The convergent validity aims to measure what it is intended to measure from each construct.

Table 1. Convergent Validity – Outer Loading Value

Construct	Indicators	First Model	Modification
<i>Queuing System</i>	QS1	0,782	0,865
	QS2	0,875	0,911
	QS3	0,774	0,800
	QS4	-0,369	exclude
	QS5	-0,415	exclude
	QS6	0,678	exclude
<i>Fast Track</i>	FT1	0,802	0,845
	FT2	0,809	0,851
	FT3	-0,101	exclude
	FT4	-0,336	exclude
	FT5	0,417	exclude
	FT6	0,574	exclude
	FT7	0,704	0,747
Patient Satisfaction	SAT1	0,867	0,862
	SAT2	0,757	0,807
	SAT3	0,572	exclude
	SAT4	0,777	0,785

The reliability analysis demonstrated value based on Cronbach’s alpha and composite reliability. Composite reliability is used to examine indicators in internal measurements of consistency. All the

Cronbach’s alpha and composite reliability values in Table 2 were above 0,6 which indicates that all the constructs used in this study are diverse in the population.

Table 2. Reliability Test

Konstruk	Cronbach’s Alpha	Composite Reliability
<i>Queuing System</i>	0,824	0,895
<i>Fast Track</i>	0,748	0,856
Kepuasan Pasien	0,753	0,895

The next step is hypothesis testing to indicate the relationship between constructs. Hypothesis testing in table 6 is seen from t-statistical value of

PLS bootstrapping results. The t-statistic value is solved by the t-table value with a significant level (α) 5% then the hypothesis is accepted

Table 3. Hypothesis Tested

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	Decision
Fast Track -> Patient Satisfaction	0,174	0,180	0,075	2,304	Supported
Queuing System -> Fast Track	0,548	0,556	0,054	10,064	Supported
Queuing System -> Patient Satisfaction	0,146	0,152	0,073	2,002	Supported

Table 3 illustrated that fast track has a positive effect on satisfaction so hypothesis 1 is accepted. Hypothesis 2 is also accepted because the t-statistic has shown 10,064 which is bigger than 1,96 (the

significant level of α 5%). It means that queuing system has a positive effect on the fast track. The queuing system also has a positive value on patient satisfaction.

4. DISCUSSION

Waiting time for healthcare exists primarily because of the mismatch between the supply and demand in healthcare provision and these two factors become the main focus in many strategies targeting ways to reduce waiting times.

Testing hypothesis 1 shows that there is an influence between fast-track services on outpatient satisfaction. Fast track services at Hermina Padang Hospital are aimed at special patients such as: TB patients, patients > 60 years old with 2 or more diseases and patients over 70 years old. This service has been provided since the beginning of 2021 with socialization to related services starting from Security who does the initial screening, then registration officers, officers at the nurse station and doctors who serve patients. These results are in line with research from Gasperini and Bell who found that fast track services can affect patient length (length of stay) in the emergency room (ED)^{6,7}. This study also found that efficiency and patient safety factors are better, especially for elderly patients.

AUTHORS' CONTRIBUTION

BY collected the data, NA sorted the transcribed interview into themes and sub- theme, NA wrote the manuscript and BY reviewed the manuscript

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Testing hypothesis 2 shows that there is an influence between the queuing system and fast track services. Tan stated that there was an influence between long waiting times on the queuing system and the absence of patients in control time in outpatient care⁸. The absence of patients in control time can reach 42% because the waiting time of the queuing system is not bad.

Testing hypothesis 3 shows that there is an influence between the queuing system and patient satisfaction. The lack of clarity in the queuing system that causes long waiting times makes 68.5% of patients at the University Clinic in Nigeria prefer to get health services⁹. The application of a good queuing system model is influenced by life safety and improved system improvements should be carried out by hospitals following the queuing system application system. A good queuing system will facilitate hospital management in promotion, especially in providing good superior service with a good queuing system with accurate waiting time estimates¹⁰.

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