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## RESEARCH ARTICLE

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## Analysis of Factors Related to Patient Satisfaction in Radiology Unit of Prof Dr. W. Z. Johannes Hospital, Kupang

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## ABSTRACT

Patient satisfaction depends on the quality of service. This study aimed to analyze the factors associated with patient satisfaction with service in radiology installations, using cross sectional design. Data were analyzed using Chi square test. The results showed  $p\text{-value} = 0.019$ , so it is concluded that there was a correlation between the level of patient satisfaction with waiting time in radiology installations. If the waiting time is long, then the patient will feel dissatisfied, on the contrary if the service time is done quickly hospital, then the patient will feel satisfied.

**Keywords:** Health service, Performance, Waiting time, Patient satisfaction

## INTRODUCTION

Satisfaction with radiology services is not only focused on the results of x-rays received by the patient, but also involves the quality of the results of the examination, the speed, the safety against the danger of radiation sources, as well as the accuracy of the X-ray results interpreted by radiologist because of the expectation of a radiological service, not only related to the healing of the disease alone, but also concerns the patient's perception of the quality of service as a whole.

Radiology service customers are not only patients who check themselves in radiology installations, but also doctors who advise patients for radiological examination. Radiology Installation is a medical support service that serves to help diagnose the patient's illness. The results of radiological examination is one of the indicators for doctors who care for these patients to conduct further treatment.

To be able to provide satisfactory radiology service we must know the perception about the quality of service provided so that the level of patient satisfaction can be given optimally and can know the emotional response and evaluation of the consumption experience of a product or service because customer satisfaction can be assessed after comparing the perceived results with hope which are desired.

In Indonesia, radiological examination has been increasing from conventional to advanced examination. From time to time the development of radiology technology in Indonesia increasingly advanced, for that human resources are required to follow the development of these technologies. In addition to be available in sufficient quantities, human resource capacity must also increase in accordance with the times. In the effort of improvement in accordance with technological developments and improvement of service quality in accordance with the expectations of society, we are required to continue to improve ourselves in all aspects of service. For that needed a patient satisfaction survey at the radiology installation of Prof. Dr. W. Z. Johannes Hospital, Kupang.

## METHODS

The population of this cross sectional study was all outpatient who visited in Radiology unit of Prof. Dr. W. Z. Johannes Kupang hospital. The sample size was 192 respondents. Independent variables in this study were officer performance, waiting time and insurance, while the dependent variable was the level of patient satisfaction. Data were collected through questionnaires. The data were categorical type so that it was presented in the form of frequency which was completed with percentage<sup>(1)</sup>, then analyzed using Chi square test or Fisher's exact test as an alternative.

## RESULTS

Table 1 shows that most patients express satisfaction with radiology unit services. This shows that the radiology installation of Prof. Dr. W. Z. Johannes Hospital, Kupang has provided adequate quality and services to support medical services according to the needs of the patients.

Table 1. Distribution of officer performance, insurance, waiting time and patient satisfaction

Variable	Frequency	Percentage
Health officer performance		
• Good	188	97.9
• Not good	4	2.1
Insurance		
• There is	138	71.9
• There is no	54	28.1
Waiting time		
• >60 minute	65	33.9
• <60 minute	127	66.1
Satisfaction		
• Satisfied	188	97.9
• Not satisfied	4	2.1

Table 2. Relationship between officer performance and patient satisfaction

Health officer Performance	Satisfaction		Total	%	p-value
	Satisfied (%)	Not satisfied (%)			
Good	66 (34.4%)	23 (12%)	89	64.4	0.000
Not good	42 (21.9%)	61 (38.8%)	103	53.3	
Total	188 (56.2%)	84 (43.8%)	192	100	

Chi square test results show p-value = 0.000, so it was concluded that patient satisfaction relate to health officer performance.

Table 3. Relationship between insurance and patient satisfaction

Insurance	Satisfaction		Total	%	p-value
	Satisfied (%)	Not satisfied (%)			
There is	31 (16.1%)	23 (12.0%)	54	28.1	0.840
There is not	77 (40.1%)	61 (31.8%)	138	71.9	
Total	108 (56.2%)	84 (43.8%)	192	100	

Chi square test results show p-value = 0.840, so it was concluded that patient satisfaction not relate to insurance.

Table 4. Relationship between waiting time and patient satisfaction

Waiting time	Satisfaction		Total (%)	p-value
	Satisfied (%)	Not satisfied (%)		
>60 minute	44 (22.9%)	21 (10.9%)	65 33.9	0.022
<60 minute	64 (33.3%)	63 (32.8%)	127 66.1	
Total	108 (56.2%)	84 (43.8%)	192 100	

Chi square results show p-value = 0.022. It was concluded that patient satisfaction relate to waiting time.

Table 5. Modeling of patient satisfaction level

Variables	B	sig	Exp (B)	95% (CI.For.EXP (B))	
				Lower	Upper
Performance	-1.440	0.000	0.237	0.127	0.443
Waiting time	-0.749	0.027	0.473	0.244	0.918
Constanta	0.612	0.014	1.844	-	-

Modeling of patient satisfaction in Radiology Unit is as follows:

$$p = \frac{1}{1 + e^{0.612 - 1.440 (\text{performance}) - 0.749 (\text{waiting time})}}$$

Probability of health officer performance and waiting time related to patient satisfaction in radiology unit was 82%.

## DISCUSSION

Hospitals are generally known as institutions that carry social missions, meaning hospital management should prioritize medical services. The specific nature of health services is that health providers (doctors and

nurses) and patients rarely consider the cost aspect as long as it involves the problem of healing a disease. However, hospitals must also be business-oriented, where with the increasingly sophisticated information technology developments have created sophisticated equipment in all areas, so hospitals must be able to prepare everything needed by society, such as health facilities<sup>(2)</sup>.

Each hospital should continue to improve patient satisfaction in order to always provide comfort to the patients. According to Wijono, a person who has paid for a product will tend to be more demanding or expect the purchased product is qualified compared to a person who gets a similar product for free or pays less. In the world of health, if the patient has paid more, then he will tend to demand more better service quality. Conversely patients who pay less or do not pay, tend to not demand more service quality more<sup>(3)</sup>.

The results show that patient satisfaction is not related to health insurance. This is because the hospital Prof. Dr. W. Z. Johannes, Kupang cooperate with various insurance. Patients who have other health insurance withdrawal are not overloading the patient. Unlike patients who use financing with Jamkesmas (Public Health Insurance) from the government, the hospital does not allow to take additional costs. Thus, patients feel that they get services that are in accordance with what they expect, so that this can increase the satisfaction of each patient.

The results of this study are consistent with the results of other studies showing that there is no relationship between the type of financing with the level of patient satisfaction in eye polyclinic unit, Sultan Agung Islamic Hospital, Semarang<sup>(4)</sup>. Meanwhile, the results of other studies there are different that there is a relationship between the source of financing factors with patient satisfaction in outpatient unit Sindangkerta Community Health Center, Bandung regency<sup>(3)</sup>. Meanwhile Suratun et al. reported that the source of maintenance costs was not associated with DM patient satisfaction<sup>(5)</sup>.

It is clear that cost is a top priority for the community in deciding to choose health services. Another reason is that there are no other charges other than hospitalization costs. This hospital accepts patients with a wide range of health insurance. The affordability of treatment costs and prescribed medicinal prices also affect patient satisfaction. Basically, price is an important aspect, but the most important is in determining the quality to achieve patient satisfaction. However, these elements affect the patient in terms of the cost incurred. Usually the more expensive the price of treatment then the patient has a greater expectation.

The waiting time is the time it takes since the patient signs up to be served by the doctor. According to Minister of Health Decree No. 129 / Menkes / SK / II / 2008 about Minimum Service Standards Hospital, standard waiting time service  $\leq 60$  minutes<sup>(6)</sup>. Service wait time is a problem that often leads to complaints of patients in various hospitals. Service waiting time becomes a measure of patient satisfaction.

In the outpatient service at the hospital, waiting time is the time required from the patient to register until served by a specialist. Hospital waiting time in relation to health services includes medical record services, emergency department, polyclinic services and so on. Waiting time is a problem that often cause patient complaints in some hospitals. The length of patient waiting time reflects how the hospital manages service components tailored to the patient's situation and expectations. Good service and quality is reflected from the friendly, fast, and convenient service<sup>(7)</sup>.

The results showed that the level of patient satisfaction correlated with waiting time. This can be seen from the hospital procedure of providing services ranging from enrollment, enrichment, and examination performed by the doctor. If the patient service time is long, then the patient will feel dissatisfied, vice versa if the service time is done by the hospital quickly, then the patient will feel satisfied.

The results of this study are consistent with other findings that indicate that there is a relationship between the waiting time of registration with patient satisfaction at TPRPJ Rumah Sakit Sukoharjo<sup>(8)</sup>. To realize good service, time factor should also be considered by the hospital. Good service and quality is a reflection in the service of a friendly, fast, and comfortable. The long waiting time of registration is due to the long queue occurring. Queues arise due to the need for services beyond service capacity or service facilities, so that users of the coming facilities can not immediately get the service. Queues often occur because the time between patient arrivals is shorter than service time.

According to Wijono, one of the factors affecting the delay of outpatient service waiting time is the performance of medical recorders and medical personnel who have not been in accordance with their duties. The long waiting time of the patient also affects the patient's level of satisfaction with the health service. Patient waiting time is one of the potential components causing dissatisfaction. Patients will consider poor health services if the illness does not heal, long queues, and unfriendly health professionals though professional<sup>(7)</sup>.

The performance of medical officers greatly establish patient satisfaction, then the hospital should improve the performance of existing medical personnel. Patients will be satisfied when handled with good service and competent medical personnel. Rivai and Sagala state that performance is a function of motivation and ability. To complete a task or job a person should have a degree of willingness and a certain level of ability. A person's willingness and skills are not effective enough to do a job without a clear understanding of what to do and how to do it. Performance can also be said as a real behavior that displayed every person as work performance generated by employees in accordance with its role in the company<sup>(9)</sup>.

According to Yusuf, job assessment is an ongoing process for assessing the quality of personnel work and efforts to improve for the work of personnel within the organization. Nurse is a profession that is humanitarian based on a sense of responsibility and devotion, so the nurse service is always concerned with humanitarian efforts that pelaksanaannya require sincerity, mutual respect and wisdom against fellow human beings. The nurse's attention at the time of organizing nursing services is on the fulfillment of basic human needs<sup>(10)</sup>.

The results showed that the level of patient satisfaction correlated with health officer performance. Through performance appraisal, the strengths, weaknesses, and potentials of each employee will be visible, so that management can develop productivity improvement programs. This program is done to find the cause of low performance as well as find the solution needed. Increased performance, productivity and corporate effectiveness is a difficult undertaking, requiring collaboration between management, employees and companies. One of the best ways to increase the company's performance capacity according to Gilley, Boughton & Maycunich is by linking compensation and rewards to employee growth and development. If all results are reinforced and rewarded, they will sincerely do the work they are repeatedly responsible for. This approach improves performance, employee engagement and development<sup>(9)</sup>.

Patient satisfaction depends on the quality of nursing service. Service is all effort by nurse as profession or professional to fulfill patient desire with service given. A service can be said to be good, based on the fact whether the services provided by the nurse can meet the needs of the patient, using the patient's perception of the service received.

### CONCLUSION

Based on the results of the study can be concluded that patient satisfaction in the radiology unit of Prof.Dr.W.Z.Johanes Kupang hospital, is determined by the waiting time and performance of health personnel.

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