THE EFFECT OF HOSPITAL SERVICE QUALITY ON INPATIENT SATISFACTION IN PIRU HOSPITAL

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Abstract

Background: Patient satisfaction is one of the indicators of hospital service quality. The mean value of patient satisfaction in the inpatient installation of Piru Hospital in October 2018 - December 2018 was relatively low with a value of 2.655. This study aims to analyse the effect of the hospital service quality on the patient satisfaction.

Methods: The design of this study was cross sectional. The study was conducted at Piru Hospital between December 2018-June 2019. The population was the patients who had received inpatient services. There were 104 respondents selected via the consecutive sampling technique. Data collection was carried out using a questionnaire whose validity and reliability had been tested. The statistical test used was the multiple linear regression test.

Results: The results showed that the dimensions of hospital service quality that were influential were time to wait for the services during hospitalization, patient's impression of service, doctor's attitude, ambience or condition of patients' room, nurse's expertise and doctor's behaviour.

Conclusion: Hospital service quality has a positive and significant effect on patient satisfaction in the inpatient installation at Piru Hospital.

Keywords: *Hospital, Inpatient, Patient satisfaction, Service quality*

Introduction

Health services in Indonesia both organized by the central and regional governments need to pay attention to the quality of services in order to meet the expectations and satisfy the public as the hospital consumers. In the perspective of total quality, it is believed that the patient is the final assessor of quality, so it can be used as one of the criteria for retaining patients in the future. Quality of service is very important in building up patient satisfaction.

The quality of health services is a total picture of the characteristics of a health service that is related to the ability to fulfill patient satisfaction needs (1). Brady and Cronin developed the concept of a hierarchy of quality health services consisting of: physical environment quality, interaction quality and outcome quality (2).

Patient satisfaction is one of the indicators of hospital services quality that becomes the asset to increase the number of the patients and create their loyalty. It will lead to a repetition of the use of certain health services and allow the loyal patients to invite others to use the same health service facilities (1). Inpatient services are parts of the service units in the hospital that provide comprehensive services to help the patients to solve their problems.

Table 1: Socio-demographic Data of the Study Participants

Characteristics	Value	n	%
Age (Years)	≤14	25	24.0
	>14 – ≤24	8	7.7
	>24 – ≤44	39	37.5
	>44 – ≤64	19	18.3
	>64	13	12.5
Gender	Male	43	41.3
	Female	61	58.7
Education	No education	12	11.5
	Elementary	33	31.7
	Junior high	2	1.9
	Senior high	41	39.4
	College	16	15.4
Occupation	Unemployed	26	25.0
	Housewife	22	21.2
	Student	18	17.3
	Employed	38	36.5
Distance from hospital	≤5 km	60	57.7
	>5 km	44	42.3
Payment scheme	Out-of-pocket payment	12	11.5
	Self-funded national insurance	41	39.4
	Government-funded national insurance	51	49.0
Length of stay	2 days	18	17.3
	3 days	40	38.5
	≥4 days	46	44.2

Based on the data of the patient visits at the inpatient installation of Piru Hospital in 2018, the number of visits decreased by 8.00% from the previous year. The indicator of hospital service performance data shows the results of the efficiency of the use of beds in inpatient installations seen from the very low achievement of Bed Occupancy Rate (BOR) (3) (30.37%) and high Nett Death Rate (NDR) (4) (31.52 ‰). It shows that the ability to provide safe and effective services and the ability to save patients in inpatient has not fulfilled the standard. The mean value of patient satisfaction in the inpatient installation of Piru Hospital between October 2018 -December 2018 is low with a value of 2.655.

The issues of decreasing inpatient visits, low utilization of beds, and low patient satisfaction in the inpatient installation of Piru Hospital are due to several factors related to the quality of hospital services. Therefore, this research needs to be conducted to analyze the effect of the hospital service quality on the patient satisfaction.

Materials and Methods
This research is a quantitative research with analytic cross sectional study design. This study was conducted at Piru Hospital, West Seram, Moluccas between October 2018-June 2019. Piru hospital is the only hospital in the district. Not having a competitor does not mean that this hospital can provide services as they wish, they must provide the best service for the most remote people who depend on it. Because of this, the research on quality and satisfaction is done here. The populations of this study were the patients who had received inpatient services at the inpatient installation of Piru Regional Hospital. The population estimated from the average number of inpatients per month in 2018 which is 1265 patients. The sample size was calculated using the formula from Lemeshow, et al. (5), so there were 104 patients with an error rate of 1%. Face-to-face interview was carried out using a structured questionnaire which was pre-tested prior to the study. Independent variables (6) were 1)

physical environment quality, 2) interaction quality and 3) outcome quality.

Physical environment quality consisted of ambient condition, design and social factors. Interaction quality measured attitude, behaviour and expertise of either nurses or doctors. Outcome quality comprised waiting time for nurses or doctors, tangibles and valence.

The study used patient satisfaction questionnaire with the Brady and Cronin satisfaction dimension (2). There were four dimensions i.e. satisfaction for physical environment quality, satisfaction for physician interaction quality, satisfaction for nurse interaction quality, and satisfaction for outcome quality.

Ethical approval from the Universitas Airlangga and permission from the director of Piru Hospital were obtained prior to the study. Written inform consent from the patients were obtained also. The information was kept confidential.

The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 23. Descriptive analyses was performed for physical environment quality, interaction quality and outcome quality. Variables with mean ≤2.50 were categorized as poor and variables with mean >2.50 were categorized as good. Multiple linear regression was used to determine the independent variables that affect patient satisfaction.

Results and Discussion
Hospital Service Quality

Hospital service quality describes the patient's assessment of inpatient services quality at Piru Hospital. The results of the hospital service quality assessment are shown in Table 2.

Based on Table 2, the overall assessment of hospital service quality is good (mean= 2.57). The customers, in this case, the patients, will evaluate an intangible product that is the service. Furthermore, they will always consider several things regarding the external

appearance and impression like the physical environment of the service provider (7).

Table 2: Hospital Service Quality Assessment on Inpatient Services at Piru Hospital in 2019

Variable	Mean
Physical Environment Quality	2.57
Ambient Condition	2.34
Design	2.70
Social Factor	2.67
Interaction Quality	2.63
Doctor's Interaction Quality	2.60
Doctor's Attitude	2.60
Doctor's Behavior	2.55
Doctor's Expertise	2.65
Nurse's Interaction Quality	2.61
Nurse's Attitude	2.64
Nurse's Behavior	2.80
Nurse's Expertise	2.39
Outcome Quality	2.52
Waiting time	2.74
Doctor's waiting time	2.49
Nurse's waiting time	2.98
Tangibles	2.33
Valence	2.44
Hospital Service Quality	2.57

The results showed that the physical environment quality received a good rating (mean=2.57). The physical environment (servicescape) has an important role, both positive and negative in building up the customer impressions (8). The physical environment is an important tangible component of a service that can provide guidance to customers and form their perception directly (9). The ambient condition assessment was carried out based on the cleanliness, comfort, aroma and noise in the inpatient rooms. The results showed that the respondents gave a poor rating (mean=2.34) towards the ambient condition as a whole.

The main function of the inpatient room is to support the patient's recovery while being treated for illness. The poor condition of the inpatient room can affect the patient, for

instance, the duration of a patient undergoing hospitalization. Furthermore, the atmosphere of the inpatient room needs to be a concern since the customers have a tendency to choose another service if they experience environmental discomfort (10).

The results showed that the respondents gave a good assessment for the design (mean=2.70). The assessment showed the ease with which visitors can access the rooms. Patients considered that the bathroom was accessible, the room spacious and the nurse station near. The nurse station should not be far from the inpatient room. It is intended to give supervision to the patients that can be done more effectively and efficiently. Its location can also affect the reduction in control and communication of the nurses to patients which can have an impact on the quality of nurse services (11).

The area of the inpatient room is related to the comfort of the patient during the stay. The more proportional area of the room with the number of patients treated, the better the health services perceived by the patients because the provision of nursing care can take place more effectively (12).

The results showed that the respondents gave a good assessment of social factors (mean=2.67). The assessment meant the patients responded positively to the interpersonal aspects of the service provided as well as the communications skill of the staff.

Table 2 showed that the results of the interaction quality assessment was good (mean=2.63). However, the results showed that the nurse expertise assessment on the interaction quality indicator was poor (mean=2.39). The nurse expertise was considered bad since the patients assumed the nurses did not carry out the nursing actions according to the doctors' instructions. Also, nurses were not able to explain some procedures which patients had questions about.
Doctors and nurses are expected to have a good interaction while providing quality

medical and nursing services to the patients. It will greatly affect the process of communication and interaction during the delivery of services performed on patients. The arrogant attitude will cause the listener to be reluctant and reject the description from the communicator (13).

The results quality is identical to what the customer receives when the production process or service product ends (14). Overall, the respondents' assessment of the outcome quality at the inpatient facility at Piru Regional Hospital was good (mean=2,52). However, the assessment of the waiting time of doctors was considered poor (mean=2.49). Likewise, the dimensions of tangibles (mean=2.33) and valence (mean=2.44) achieved poor ratings. The overall outcome quality was good due to the highly positive response of the waiting time of the nurses (mean=2.98).

The dimension of the doctor's waiting time is measured by the responsiveness with which the medical actions were delivered. Patients considered the doctors to be not punctual and the delivery services being done in a rushed manner. The tangibles dimensions achieved poor rating (mean=2.33). Patients found the facility to be in an improper condition, including the bed sheets, the pharmacy and the laboratories. The valence dimension achieved a poor rating (mean=2.44). The rating was because the patients reported a bad experience with room facilities, pharmacy services and laboratory services.

The patient experience is important because the hospital is a service provider, so most of it is conveyed as performance and experience. The quality of service can be felt simultaneously when the service is provided, i.e. at the time of interaction between the consumers and the service providers(14). If there are still respondents who give negative evaluations, it leads to two possibilities which are the delivery of the health services that have not been maximized or the differences in perceptions between people with one another.

The patients' considerations in determining whether they get a good experience is influenced by the experience of encountering with the health service provider which can then develop into the basis for determining patient satisfaction (15,16).

Patient Satisfaction
Patient satisfaction is the feeling of pleasure or disappointment which the patients get from comparing the performance or perceived services with expectations (17). The results of the patient satisfaction assessment are shown in Table 3.

Table 3 shows that the overall assessment of patient satisfaction at the inpatient facility at Piru Hospital is good (mean=2.60). From the four measurement aspects, the highest value is in the aspect of nurse interaction quality (mean=2.68). Interaction quality refers to the patient's perception towards the services provided by the health workers (18). Of all the sub-aspects of nurse interaction quality, the patients responded most poorly to nurse's expertise satisfaction (mean=2.45).

The aspect with the lowest score is the satisfaction for outcome quality (mean=2.50). The outcome quality is the patient satisfaction with the quality of service outcomes felt during the hospitalized (19). The sub-aspects of outcome quality which returned the poorest response from patients are tangibles' satisfaction (mean=2.13) and valence satisfaction (mean=2.46).

Table 3: Patient Satisfaction Assessment on Inpatient Services at Piru Hospital in 2019

Variables	Mean
Patient satisfaction with Physical Environment Quality	2.60
Ambient Condition Satisfaction	2.37
Design Satisfaction	2.71
Social Factors Satisfaction	2.70
Patient satisfaction for Doctor's Interaction Quality	2.62
Doctor's Attitude Satisfaction	2.65
Doctor's Behavior Satisfaction	2.62
Doctor's Expertise Satisfaction	2.59
Patient satisfaction for Nurse Interaction Quality	2.68
Nurse's Attitude Satisfaction	2.70
Nurse's Behavior Satisfaction	2.88
Nurse's Expertise Satisfaction	2.45
Outcome Quality Satisfaction	2.50
Doctor's Waiting Time Satisfaction	2.58
Nurse' Waiting Time Satisfaction	2.82
Tangibles Satisfaction	2.13
Valence Satisfaction	2.46
Patient Satisfaction	2.60

Effect of Hospital Service Quality on Inpatient Satisfaction
Multiple linear regression was conducted to test the effect of hospital service quality on inpatient satisfaction. Test results are shown in Table 4.

Table 4: The Influence of Hospital Service Quality on Inpatient Satisfaction in Piru Hospital 2019

Variable	b	p
Hospital Service Quality	0.635	0.000
Physical Environment Quality		
Ambient Condition	0.160	0.001
Design	0.052	0.416
Social Factor	0.080	0.169
Interaction Quality		
Doctor's Attitude	0.237	0.000
Doctor's Behavior	0.115	0.045
Doctor's Expertise	0.056	0.257
Nurse's Attitude	0.094	0.192
Nurse's Behavior	0.027	0.620
Nurse Expertise	0.134	0.015
Outcomes Quality		
Doctor Waiting Time	0.285	0.000
Nurse Waiting Time	0.094	0.190
Tangibles	0.079	0.379
Valence	0.257	0.000

Based on Table 4, the overall hospital service quality had a significant and strong influence on the patient satisfaction (p = 0.000, b = 0.635). It meant that good quality hospital services could increase patient satisfaction in the inpatient installation of Piru Hospital. It is in line with previous studies which found that the patient satisfaction is directly affected by the service quality (19). Similar research also states that 74.9% of the patient satisfaction is explained by the service quality variables (20).

In the results of the physical environment quality sub-variables, there was one dimension that affects patient satisfaction, which was the ambient condition with the b value of 0.160. This result is supported by the previous research which states that the physical environment condition of the inpatient room affects the satisfaction of the patients (21).

The interaction quality sub-variables that influenced patient satisfaction were the dimension of the doctor's attitude (b=0.237),

doctor's behaviour (b=0.115) and nurse's expertise (b=0.134). This result is in line with the previous research conducted by Triwahyuni (22) which states that doctor's services affect patient satisfaction. On the other hand, if the interaction takes place poorly, it will lead to frustration (23).

The results on the nurses expertise is also supported by a research showing that nurses skills influence inpatient satisfaction (24, 25). The outcome quality sub-variables that influenced the patient's satisfaction were the waiting time dimension of doctors (b=0.285) and valence (b=0.257). It needs to be considered since based on Ariani (26), it is mentioned that the outcome quality has a positive effect on the patient's satisfaction.

The results of the study are also in accordance with the previous study which states that the length of the waiting time affects patient satisfaction (27). In addition, the result of this study is strengthened by the previous research which states that the responsiveness of doctors in treating patients is very important because it affects patient satisfaction (28).

The result on valence is in line with the previous research which showed that valence is strongly influential to satisfaction (29). All of those sub-variables returned a positive regression coefficient which showed a direct relationship between each of those sub-variables with patient satisfaction.

Referring to Table 2, four of those mentioned sub-variables showing direct relationship were considered to show poor quality in Piru Hospital. Those sub-variables were 1) ambient condition, 2) nurse expertise, 3) doctor waiting time and 4) valence. Four of them should be addressed by the hospital administration in order to enhance patient satisfaction.

Conclusion
Hospital service quality has a positive and significant effect on patient satisfaction in the inpatient installation at Piru Hospital. As the only hospital in the district, and with limited resources, it is a challenge for Piru hospitals to

provide the best service to meet the needs of these remote areas. Even without competitors, hospitals must pay attention to patient satisfaction, while continuing to improve the improvement of its resources for the sake of improving public health. The limitation of this study was that the sample was only taken from the inpatient unit.

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Competing Interests

The authors declare that they have no competing interests.

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