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Associations between Reliability, Assurance, Physical Evidence, Responsiveness, Empathy, Gender, and Income with Inpatient Satisfaction in Yos Sudarso Hospital, Padang, Indonesia

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ABSTRACT

Background: Patient satisfaction refers to the patient's perception and assessment of the quality of health services he receives. There are many factors that affect patient satisfaction. This study aims to analyze variables that affect patient satisfaction.

Subjects and Method: This study is an observational analytical study with a cross-sectional design. This research was conducted on Yos Sudarso Hospital, Padang City, in March-May 2024. A sample of 200 patients was selected by simple random sampling. The dependent variable in this study is patient satisfaction. The independent variables in the study were reliability, guarantee, physical evidence, responsiveness, empathy, gender, and income. Data collection was carried out using a questionnaire and analyzed by path analysis.

Results: Patient satisfaction in the health center was influenced by reliability ((b= 0.51; 95% CI= 0.39 to 0.62; p<0.001)), assurance (b= 0.62; 95% CI= 0.52 to 0.72; p<0.001), physical evidence (b= 0.52; 95% CI= 0.41 to 0.64; p<0.001), responsiveness (b= 0.69; 95% CI= 0.60 to 0.78; p<0.001), empathy (b= 0.69; 95% CI= 0.60 to 0.78; p<0.001), gender (b = 0.15; 95% CI = <0.01 to 0.30; p = 0.047), and income (b = -0.31; 95% CI = -0.45 to -0.17; p<0.001).

Conclusion: Patient satisfaction is positively influenced by reliability, assurance, physical evidence, responsiveness, empathy, gender, and income.

Keywords: reliability, physical evidence, responsiveness, empathy, patient satisfaction

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BACKGROUND

Patient satisfaction is one of the indicators that must be considered in health services. Patient satisfaction is the result of an assessment of health services by comparing what is expected in accordance with the reality accepted in a hospital health order (Kotler, 2016). According to the 2016 Regulation of the

Ministry of Health of the Republic of Indonesia, the minimum standard for patient satisfaction is above 95%. If it is found that health services with a patient satisfaction level below 95%, it is considered that the health services provided do not meet minimum standards or are not of high quality (Ministry of Health, 2016).

SERVQUAL is the most widely used model in measuring the quality of healthcare. It is still reported as an appropriate measurement model to measure service quality. The SERVQUAL model consists of five dimensions, i.e. reliability, assurance, tangible (physical evidence), responsiveness and empathy (Parasuraman in San, 2022).

Based on the profile data of the Padang city health office, the SERVQUAL dimension on patient satisfaction in three hospitals in the city of Padang, namely Dr. Reksodiwiryo hospital, Yos Sudarso hospital, and Ibnu Sina hospital, shows that the reliability dimension is 12.3%, the guarantee dimension is 27.9%, physical evidence is 11.1%, responsiveness is 35.3%, and empathy is 13.4%. The responsiveness of officers in health services is considered important by patients because of the speed of service provided by officers to patients when patients need help (Haryeni, 2020). Based on the above problems, this study is important to conduct in order to analyze the Influence of Liability, Guarantee, Physical Evidence, Responsiveness, and Empathy on Inpatient Satisfaction of Yos Sudarso Hospital, Padang, West Sumatra, Indonesia.

SUBJECTS AND METHOD

1. Study Design

The research design used in this study is an observative analytical study with *a cross-sectional* design. This research was conducted at Yos Sudarso Hospital, Padang City. This research was conducted in March-May 2024.

2. Population and Sample

The study population is 400 patients at Yos Sudarso Hospital, Padang City. A sample of 200 health center employees was randomly selected with simple random sampling.

3. Research Variables

The bound variable in this study is patient satisfaction. The independent variables in the study were reliability, assurance, physical evidence, responsiveness, and empathy.

4. Operational Definition

Reliability is the ability to carry out the promised service reliably and accurately. Data was collected using questionnaires. The data scale used is continuous.

Assurance is the knowledge and courtesy of hospital employees, as well as their ability to convey trust and confidence. Data were collected using questionnaires. Data measurement uses a continuous scale.

Physical Evidence is the appearance of physical facilities, equipment, personnel, and communication materials. Data was collected using a questionnaire with a continuous data scale.

Responsiveness is the willingness to help customers and provide prompt service. Data was collected using questionnaires. Data capture uses continuous data scales.

Empathy is the caring, individual attention that health workers give to patients. Data was collected using a questionnaire with a continuous data scale.

Gender is a social concept that refers to the characteristics, roles, behaviors, and identities that are considered appropriate for both men and women in a society.

Income is income or income such as salary, and wages that a person receives.

Patient satisfaction is the result of a subjective value on the quality of services provided. The data scale used is the dichotomous data scale.

5. Study Instrument

The research instruments used for data collection were questionnaires.

6. Data Analysis

Univariate analysis was used to see the frequency distribution of the characteristics of the subject of the research variables. Bivariate analysis was used to see the difference in the mean of the two groups. Multivariate analysis using *path analysis* using Stata 13 program.

7. Research Ethics

Research ethics include consent sheets, anonymity, confidentiality, and ethical feasibility. The ethical feasibility of this study comes from the Health Research Ethics Committee of Dr. Moewardi Surakarta with number: 768/III/HREC/2024.

RESULTS

1. Sample Characteristics

Table 1 shows that some of the female genders amount to 113 people (56.50%), age over or equal to 37 years as many as 113 people (56.50%), high school and higher education as many as 109 people (54.50%), self-employed workers, civil servants/TNI/Polri 180 people (90.00%). Family income of 128 people (89.00%) with an income of ≥ Rp. 1,200,000.

Table 1. Sample characteristics

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Female	113	56.50
	Male	87	43.50
Age	< 37 years	87	43.50
	≥ 37 years	113	56.50
Education	No formal education, PS, JHS,	91	45.50
	SHS and College	109	54.50
Occupation	Non civil servant	20	10.00
	Civil servant/ soldier/policeman	180	90.00
Family Income	< Rp. 1,200,000	22	11.00
	≥ Rp. 1,200,000	128	89.00

2. Univariate Analysis

The univariate analysis was conducted to examine the frequency distribution of the research variables' characteristics.

Table 2 shows the results of univariate analysis that out of 200 research subjects, reliability has a mean value (Mean= 8.81; SD= 1.34). The guarantee variable has a mean value (Mean = 6.81; SD= 1.70). the physical evidence variable, has a mean value (Mean = 7.86; SD= 1.31). The responsiveness variable has a mean value (Mean = 8.64; SD= 1.24). The empathy variable has a mean value (Mean= 68.47; SD= 1.42).

Table 2. Univariate analysis of research variables

Variable	N	Mean	SD	Min.	Max.
Reliability	200	8.81	1.34	0	10
Guarantee	200	6.81	1.70	0	10
Physical Evidence	200	7.86	1.31	2	10
Responsiveness	200	8.64	1.24	0	10
Empathy	200	8.47	1.42	0	10
Patient Satisfaction	200	8.79	1.29	0	10

3. Bivariate Analysis

Bivariate analysis was used to determine the effect of reliability, guarantee, physical evidence, responsiveness, and empathy on patient satisfaction.

Table 3 shows that every increase in one unit of reliability will be followed by an increase in patient satisfaction by 1,351 units (OR= 1.35; 95% CI= 0.61 to 2.99; p= 0.001). Guarantee variable Each increase in one guarantee unit will be followed by an increase in patient satisfaction by 1,946 units (OR= 1.95; 95% CI= 0.85 to 4.45; p= 0.001). Physical evidence variables: Each increase in one unit of physical evidence will be followed by an increase in patient satisfaction by 3. 055 units (OR= 3.06; 95% CI= 1.42 to 6.05; p= <0.001). Responsiveness variables: Each increase in one unit of responsiveness will be followed by an increase in patient satisfaction by 2.56 units (OR= 2.56; 95% CI= 1.09 to 6.59; p <0.001). Empathy variables: Each increase in one unit of empathy will be followed by an increase in patient satisfaction by 0.34 units (OR= 0.34; 95% CI= 0.15 to 0.77; p <0.001).

Table 3. Simple linier regression of associations between reliability, guarantee, physical evidence, responsiveness, and emphaty on patient's satisfaction

Independent Variables	OR	95% CI		p
		Lower Limit	Upper Limit	
Reliability	1.35	0.61	2.99	0.001
Guarantee	1.95	0.85	4.45	0.001
Physical Evidence	2. 56	1.09	6.05	<0.001
Responsiveness	3. 06	1.42	6.59	<0.001
Empathy	0.34	0.15	0.77	<0.001

4. Multivariate Analysis

Path analysis was used in this multivariate analysis to determine the effect of reliability, guarantee, physical evidence, responsiveness, and empathy on patient satisfaction.

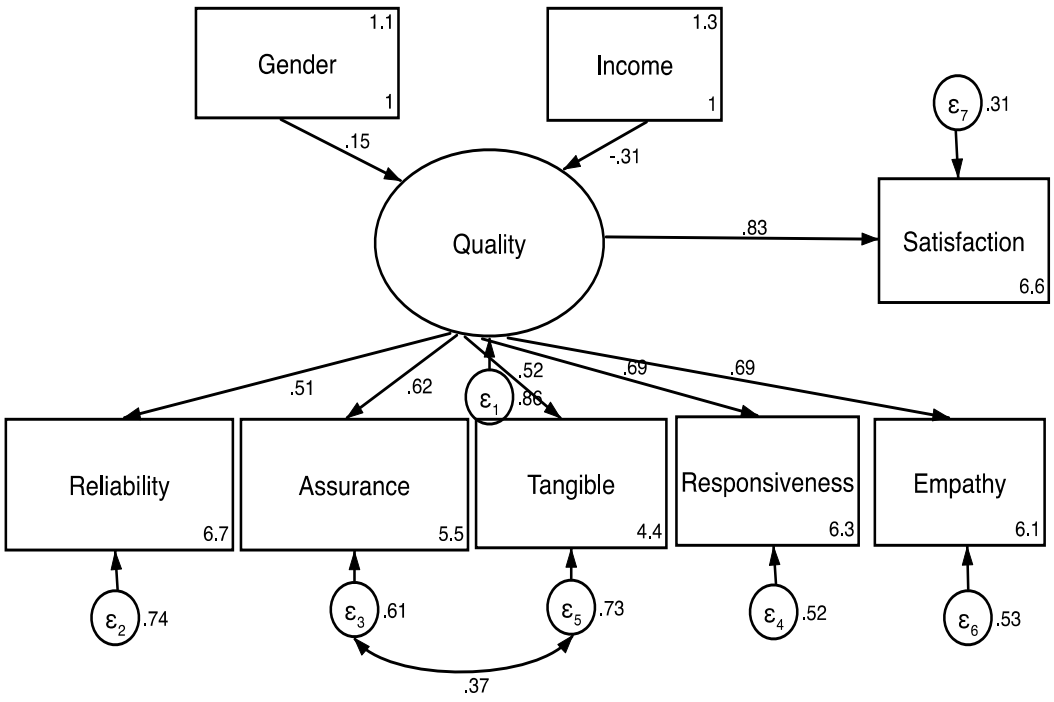

Figure 1 Structural relationships and influences estimated in SEM

Figure 1 shows that in the SEM model, the latent variables of health service quality are formed by indicators that include reliability, assurance, physical evidence, responsiveness, and empathy. The compatibility of the model with the estimate can be seen from the results of the analysis of the influence of latent variables (reliability, guarantee, physical evidence, responsiveness, empathy) and structural variables (gender and income) on patient satisfaction. The results of the analysis are as follows. The results of the detailed analysis of the research path can be seen in the Table 4.

Table 4. The results of path analysis of factors related to quality of service and patient's satisfaction

Dependent Variables		Independent Variables	Path Coefficient (b)	CI (95%)		p
				Lower Limit	Upper Limit	
Measurement Components						
Quality of Service	→	Reliability	0.51	0.39	0.62	<0.001
	→	Guarantee	0.62	0.52	0.72	<0.001
	→	Physical evidence	0.52	0.41	0.64	<0.001
	→	Responsiveness	0.69	0.60	0.78	<0.001
	→	Empathy	0.69	0.60	0.78	<0.001
Structural Components						
Patient Satisfaction	←	Quality of Service	0.83	0.76	0.90	<0.001
Quality of Service	←	Gender	0.15	<0.01	0.30	0.047
	←	Income	-0.31	-0.45	-0.17	<0.001
N observation = 200 Log likehood = -3590.12						

Table 4 shows the results of the Structural Equation Model (SEM) which includes measurement and structural components in the analysis of the relationship between service quality and patient satisfaction in hospitals.

Measurement Components

a. Quality of Service

Table 4 shows that the quality of health services is influenced or shaped by reliability, assurance, physical evidence, responsiveness, and empathy.

b. Service Quality and Reliability

Table 4 shows that the quality of service is formed by reliability indicators with a fairly large factor load (b= 0.51; 95% CI= 0.39 to 0.62; p<0.001).

c. Quality of Service and Guarantee

Table 4 shows that the quality of service is formed by assurance indicators with a fairly large factor load (b= 0.62; 95% CI= 0.52 to 0.72; p<0.001).

d. Quality of Service and Physical Evidence

Table 4 shows that the quality of services is formed by physical evidence indicators with a fairly large factor load (b= 0.52; 95% CI= 0.41 to 0.64; p<0.001).

e. Service Quality and Responsiveness

Table 4 shows that the quality of service is formed by the responsiveness indicator with a fairly large factor load (b= 0.69; 95% CI= 0.60 to 0.78; p<0.001).

f. Quality of Service and Empathy

Table 4 shows that the quality of service is formed by reliability indicators with a fairly large factor charge (b= 0.69; 95% CI= 0.60 to 0.78; p<0.001).

Structural Components of Service

Quality

Table 4 shows that the quality of health services is influenced or shaped by the structural components of gender, income, and patient satisfaction.

a. Quality of Service and Gender

Table 4 shows that there is an influence of gender on service quality. Women rated quality higher than men, and the difference was statistically significant (b = 0.15; 95% CI = <0.01 to 0.30; p= 0.047).

b. Service Quality and Income

Table 4 shows that there is an influence of income on service quality. Patients with higher income (≥ Rp. 1,200,000/month) rated the quality of service as higher than those with low income (<Rp. 1,200,000) (b= -0.31; 95% CI = -0.45 to -0.17; p<0.001).

c. Quality of Service and Patient Satisfaction

Table 4 shows that the quality of service affects patient satisfaction with a fairly large load of factors (b= 0.83; 95% CI = 0.76 to 0.90 p<0.001).

DISCUSSION

1. The Effect of Reliability on Patient Satisfaction

There was a positive and statistically significant influence on the reliability variable on patient satisfaction. The results showed that good reliability would increase patient satisfaction by 0.51 times. Patients who receive accurate, timely, and promised services tend to be satisfied with hospital services.

Another research by Putra et al. (2022) emphasizing the importance of reliability to patient satisfaction Reliability has a positive influence on patient satisfaction. Reliable services include accurate diagnoses, explanations of treatment, and prior information about the procedure. The study notes that increased reliability can improve patient satisfaction.

2. The Effect of Assurance on Patient Satisfaction

There was a positive and statistically significant influence on the guarantee variable on patient satisfaction. The results showed that good assurance would increase patient satisfaction by 0.62 times. Patients who judged that the hospital staff were polite, and trustworthy were more likely to feel satisfied.

Another study that supports the results of the above analysis is a study conducted by Tobing et al. (2023) reporting that guarantees have a significant effect on patient satisfaction (p< 0.001). Assurance involves staff behavior that fosters patient trust and comfort.

3. The Effect of Physical Evidence on Patient Satisfaction

There was a positive and statistically significant influence on the physical evidence variables on patient satisfaction. The results showed that good physical evidence would increase patient satisfaction by 0.52 times. Patients who assess that the physical appearance and adequate equipment owned by the hospital make patients tend to feel satisfied.

Another study that supports the results of the above analysis is a study conducted by (Suciati et al., 2023), the study showed a significant relationship between physical evidence and patient satisfaction, he found that physical evidence had a significant impact on patient satisfaction (p < 0.001).

4. The Effect of Responsiveness on Patient Satisfaction

There was a positive and statistically significant influence on the responsiveness variable to patient satisfaction. The results showed that good responsiveness would increase patient satisfaction by 0.69 times. The ability of officers to provide services quickly and in accordance with standards that can meet patient expectations makes patients feel satisfied with the services received.

Another study that supports the results of the above analysis is a study conducted by

Susanty et al. (2023) showing that the responsiveness dimension is the most dominant dimension of service quality affecting patient satisfaction (p= 0.003) and statistically shows that the responsiveness dimension can increase patient satisfaction by 73.64 times (OR=73.64). This shows that patients highly appreciate the skills and speed of health workers in providing services so that there are no errors in the services received by patients.

5. The Effect of Empathy on Patient Satisfaction

There was a positive and statistically significant influence on the empathy variable on patient satisfaction. The results showed that good empathy would increase patient satisfaction by 0.69 times. The care given to hospital staff to patients gives a positive value to patient satisfaction with hospital services.

Another study that supports the results of the above analysis is a study conducted by Yuliana et al (2024) reporting that empathy has an impact on patient satisfaction (p= 0.002). Empathy involves healthcare workers who provide non-discriminatory, communicative, and caring services.

6. The Effect of Gender on Patient Satisfaction

There was a positive and statistically significant influence on gender variables on patient satisfaction. The results showed that the female gender had 0.15 times more satisfaction than male patients. Men judge things logically and generally, while women judge things by feelings and things of a specific nature.

Another study was conducted by Oroh et al. (2020) showed that there was a relationship between gender and patient satisfaction (p= 0.005). Gender has an influence on patient satisfaction because the views on the services provided by the hospital are different between women and men. Women see their appearance in more detail and detail, while men have a view that tends to be more indifferent to what is around them so that men are considered more flexible than women.

7. The Effect of Income on Patient Satisfaction

There was a positive and statistically significant influence on gender variables on patient satisfaction. Data shows that patients with higher income (≥ Rp. 1,200,000/ month) rate the quality of service higher than those with low income (<Rp. 1,200,000). Patients with income (<Rp. 1,200,000) rated the quality of service as good and tended to be satisfied with the services provided by the hospital.

Another study that supports the results of the above analysis is a study conducted by Anfal A. (2020), this study was conducted at Sundari General Hospital Medan and found that high-income respondents have greater demands and expectations for the health services needed because high-income respondents are more financially capable. Respondents with low incomes generally have a dependence on cheaper health service facilities so that with their income they can still receive affordable health services in terms of cost.

8. The Effect of Service Quality on Patient Satisfaction

The results of the analysis show that the quality of service has a direct and positive influence on inpatient satisfaction. The results of the study are supported by research conducted by Widayati (2017) which states that patient satisfaction can be influenced by income, education, frequency of arrivals, and service quality (OR = 0.04). In addition, Nova (2010) reported that more than 70% of patient satisfaction came from the quality of service consisting of reliability (OR= 4.05), responsiveness (OR= 4.28), confidence (OR= -4.2), embodiment (OR= 5.19), and empathy of medical staff (OR= 1.98).

AUTHOR CONTRIBUTION

All authors contributed equally to all stages of the research, including problem formulation, data collection and analysis, interpretation of results, and manuscript writing and revision.

CONFLICT OF INTEREST

There is no conflict of interest.

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