

Contextual Effect of Health Centers and Quality Dimensions of Antenatal Services on Patient Satisfaction in Klaten, Central Java

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ABSTRACT

Background: Puskesmas plays an important role in reducing maternal and neonatal morbidity and mortality. Contextual health centers and dimensions of service quality can improve maternal and child health services. This study aimed to analyze the factors that influence patient satisfaction.

Subjects and Method: A cross sectional study was conducted in Klaten Regency, Central Java. A sample of 200 pregnant women at the community health centers was selected by simple random sampling. The dependent variable was patient satisfaction. The independent variables were reliability, tangible, empathy, responsiveness, and assurance. The data were analyzed by multiple multilevel linear regression using the Stata 14 application.

Results: Patient satisfaction was influenced by reliability (b=0.30; 95% CI= -0.48 to -0.13; p= 0.001), tangible (b= 0.28; 95% CI= 0.14 to 0.42; p<0.001), responsiveness (b= 0.17; 95% CI= 0.07 to 0.27; p= 0.001), and assurance (b= 0.16; 95% CI= 0.04 to 0.28; p= 0.007), while empathy has no effect on patient satisfaction (b= -0.02; 95% CI= -0.28 to 0.23; p= 0.837). Health center had strong contextual effect on patient satisfaction with ICC= 36.4%.

Conclusion: Patient satisfaction is influenced by reliability, tangible (physical evidence), responsiveness, and assurance, while empathy has no effect on patient satisfaction.

Keywords: satisfaction, Puskesmas, multilevel linear regression

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BACKGROUND

Maternal survival is one of the important issues and has become a global health priority listed in the Sustainable Development Goals (SDGs) in the health sector (Owili et al, 2017). This is in line with the direction of Indonesia's health development as stated in the 2015-2019 National Medium-Term Development Plan (RPJMN). One of the targets in the Healthy Indonesia Program is to accelerate the fulfillment of access to

maternal health services through increased delivery assistance by trained health workers in health facilities (Bappenas, 2014).

The World Health Organization (WHO) estimates that in 2015 there were 303,000 mothers in the world died with 99% of cases occurring in low- and middle-income countries. More than 80% of cases are preventable deaths (Raven et al., 2012; WHO, 2018). The maternal mortality rate

(MMR) in Indonesia has decreased from 1991 to 2007, from 390 per 100,000 live births to 228 per 100,000 live births. This figure increased significantly in 2012 to 359 per live birth and decreased again in 2015 to 305 per 100,000 live births (Kemenkes RI, 2018). However, this figure is still far from the global target of the Millennium Development Goals (MDGs) in 2015, which is 102 per 100,000 live births (Kemenkes RI, 2014a).

Maternal mortality is the number of women who die from a cause of death related to pregnancy disorders or their management (excluding accidents or incidental cases) during pregnancy, childbirth, and the puerperium (42 days after giving birth) without taking into account the length of pregnancy. In Klaten District, the number of maternal deaths that is more appropriate is the number and has not used numbers, and does not use the 100,000 denominator. Maternal Mortality Rate (MMR) describes the problems of the status of pregnant women, mothers giving birth and postpartum mothers. MMR in Central Java in 2017 was recorded at 475 cases or 88.05 per 100,000 live births. Based on the results of the 2015 Intercensus Population Survey (SUPAS) the MMR in Indonesia is 305 per 100,000 live births. This figure did not succeed in achieving the MDGs target that must be achieved, which is 102 per 100,000 live births in 2015.

MMR in Klaten Regency is still high, recorded in 2014 at 115.7 per 100,000 live births, in 2015 it was 88.22 per 100,000 live births, in 2016 it was 108.84 per 100,000 live births, in 2017 it was 112.76 per 100,000 live births. live, and in 2018 it was 82.35 per 100,000 live births. Maternal Mortality Rate is influenced by environmental health conditions, mother's education/ knowledge level, nutritional status and health services. For 2018, the Maternal

Mortality Rate (MMR) is $13/15,786 \times 100,000 = 82.35/100,000$ live births, and has decreased compared to the AKI in 2017 of $112.76 / 100,000$ live births. Meanwhile, the number of maternal mortality cases decreased in 2018 as many as 13 cases of death. There were 13 maternal deaths consisting of 5 maternal deaths, 2 maternal deaths and 6 postpartum maternal deaths. Of the 13 maternal deaths, the causes included 2 deaths due to bleeding, 6 deaths due to pre-eclampsia, 3 deaths caused by circulatory system disorders (heart, stroke) and 2 deaths caused by other causes (hyperthyroidism and embolism) (Dinkes Klaten, 2018).

Puskesmas is one of the government agencies that play a role in the implementation of health services to the community, is required to improve the quality of performance in providing services to the community. The services provided are able to meet the needs, desires and expectations of the community and are able to provide satisfaction. Community satisfaction can be used as an assessment material for service elements that still need improvement and become the driving force for each service provider unit to improve the quality of its services (Ratminto, 2006).

In the field of health services other than hospitals, Puskesmas is a government institution that is engaged in providing inpatient health services to the community at the forefront by providing medical services, nursing, and medical support services. To provide a good service to the community, especially people who want to get basic health services and consultation in the health sector, all supporting elements in the puskesmas must strive to improve the quality of service if the puskesmas does not want to be abandoned by the community because essentially satisfaction is related to service improvement. , the more perfect the

service provided to the patient, the higher the level of patient satisfaction (Wijono, 1999).

Quality health services are health services that can satisfy every service user. Researchers are interested in studying the determinants of quality and antenatal satisfaction in the city of Klaten.

SUBJECTS AND METHOD

1. Study Design

This was an analytic observational study with a cross sectional design. The research was conducted at a public health center in Klaten, Central Java starting from April 2021 to June 2021.

2. Population and Sample

The population in this study consisted of antenatal patients who worked at the Puskesmas in Klaten Regency. A sample of 200 ANC patients was selected by random sampling.

3. Study Variable

The dependent variable is patient satisfaction. The independent variables are reliability, tangible, empathy, responsiveness, assurance.

4. Operational Definition of Variables

Tangible is related to the attractiveness of the physical facilities, equipment, and materials used by the puskesmas, as well as the appearance of the health center employees. Data were collected using a questionnaire. The data scale is continuous, but for the analysis it is changed to a dichotomy, the code 0= disagree and 1= doubtful

Reliability is related to the ability of the puskesmas to provide accurate services from the first time without making any mistakes and delivering services according to the agreed time. Data were collected using a questionnaire. The data scale is continuous, but for data analysis it is changed to a dichotomy, code 0 = disagree and 1 = doubtful

Responsiveness is related to the willingness and ability of puskesmas employees to help patients and respond to their requests, as well as inform when services will be provided and then provide services quickly. Data were collected using a questionnaire. The data scale is continuous, but for data analysis it is changed to a dichotomy, code 0= disagree and 1= doubtful

Assurance is that the behavior of health center employees is able to foster patient trust in puskesmas and puskesmas can create a sense of security for patients. This guarantee also means that puskesmas employees are always courteous and possess the knowledge and skills needed to deal with any questions or concerns a patient has. Data were collected using a questionnaire. The data scale is continuous, but for data analysis it is changed to a dichotomy, code 0= disagree and 1= doubtful

5. Data Analysis

a. Univariate Analysis

Univariate analysis was performed on each study variable. Categorical data were described with a frequency distribution table. A continuous sample of data characteristics were described in terms of the parameters n, mean, SD, minimum, and maximum.

b. Bivariate Analysis

Bivariate analysis in this study used a correlation test. This test is to find out how big the relationship between the independent variable and the dependent variable is.

c. Multivariate Analysis

Contextual effect of health center and other variables were analyzed by a multiple multilevel regression.

6. Research Ethics

This research was conducted based on research ethics, namely informed consent, anonymity, confidentiality, and ethical research.

RESULTS

1. Univariat Analysis

Table 1 shows the characteristics of the sample (continuous data). Categorical data are shown in table 2. Table 2 shows the age of the research subjects at most <35 years old with a total of 151 people (75.5%). The highest education level is senior high school as many as 123 people (61.5%). Most of ANC patients have family income <3 million/ month (88%), had ANC visits <5 times (83.5%).

2. Bivariat Analysis

Bivariate analysis to determine the relationship of the independent variable to the dependent variable. Table 3 shows that there is no statistically significant relationship between reliability and patient satisfaction ($r= 0.05$; $p= 0.442$).

Table 3 showed that there was a statistically significant relationship between tangible (physical evidence) and patient satisfaction ($r= 0.27$; $p<0.001$). There is a statistically significant relationship between empathy and patient satisfaction ($r= 0.16$; $p<0.001$). Table 3 showed that there was a statistically significant relationship between responsiveness and patient satisfaction ($r= 0.27$; $p<0.001$). Table 3 showed that there was a statistically significant relationship between assurance and patient satisfaction ($r= 0.30$; $p<0.001$).

3. Multivariat Analysis

Table 4 shows the results of multivariate analysis of the effect of tangible reliability,

empathy responsiveness, and assurance on ANC patient satisfaction using a multilevel linear regression model.

The results of multilevel analysis show that there is an effect of reliability on patient satisfaction. High reliability increased patient satisfaction ($b= 0.30$; 95% CI= -0.48 to -0.13 ; $p= 0.001$).

The results of multilevel analysis show that there is a tangible effect on patient satisfaction. High tangibles increased patient satisfaction ($b= 0.28$; 95% CI= 0.14 to 0.42 ; $p<0.001$).

The results of multilevel analysis showed that there was no effect of empathy on patient satisfaction ($b= -0.02$; 95% CI= -0.28 to 0.23 ; $p=0.837$).

The results of multilevel analysis show that there is an effect of responsiveness on patient satisfaction. High responsiveness increased patient satisfaction ($b= 0.17$; 95% CI= 0.07 to 0.27 ; $p= 0.001$).

The results of the multilevel analysis show that there is an effect of assurance on patient satisfaction. High assurance increased patient satisfaction ($b= 0.16$; 95% CI= 0.04 to 0.28 ; $p= 0.007$).

There is a large contextual influence of factors at the puskesmas level on the level of patient satisfaction. As much as 36.4% variation in the level of patient satisfaction is determined by contextual factors at the health center ($ICC=36.4\%$).

Table 1. Sample Characteristics (continuous data)

Variable	N	Mean	SD	Min.	Max .
Satisfaction	200	8.49	0.91	4	9
Realiability	200	7.75	0.92	0	8
Tangible	200	7.58	1.18	0	8
Empathy	200	5.85	0.74	0	6
Responsiveness	200	5.86	0.96	2	7
Assurance	200	5.19	0.96	1	6

Table 2. Sample Characteristics (categorical data)

Characteristics	N	%
Age		
<35 years	151	75.5
≥35 years	49	24.5
Education		
Primary school	6	3
Junior high school	38	19
Senior high school /vocational school	123	61.5
Diploma	12	6
Bachelor	12	10.5
Income		
<3 million	176	88
≥3 million	24	12
Preganancy visit		
<5 times	167	83.5
≥5 times	33	16.5
Payment method		
general	104	52
BPJS	96	48
Profession		
Inside the house	113	56.5
Outside the house	87	44.5

Table 3. The results of the bivariate analysis of the dimensions of service quality and patient satisfaction with ANC.

Quality dimention	Patient satisfaction	
	r	p
Reliability	0.05	0.442
Tangible	0.27	<0.001
Empathy	0.16	0.022
Responsiveness	0.27	<0.001
Assurance	0.30	<0.001

Table 4. Factors affecting the patient satisfaction

Dependent variable	b	95% CI		p
		Lower limit	Upper limit	
Fixed effect				
Reliability	-0.30	-0.48	-0.13	0.001
Tangible	0.28	0.14	0.42	<0.001
Emphaty	-0.02	-0.28	0.23	0.837
Responsiveness	0.17	0.07	0.27	0.001
Assurance	0.16	0.04	0.28	0.007
Random effect				
Variation between puskesmas	0.23			
Variation residual of all puskesmas	0.40			
ICC= 36.4%				

DISCUSSION

1. The effect of reliability on satisfaction

The results of this study indicate that there is an effect of reliability on patient satis-

faction (b= 0.30; 95% CI= -0.48 to -0.13; p= 0.001)

The dimension of reliable service quality refers to how the puskesmas provides quality and accurate services in accordance with what has been promised. This means

that the puskesmas provides reliable services to patients according to what has been promised. Reliability is considered as the most important service quality dimension (Parasuraman, 2007).

The results of this study are consistent with the study conducted by Kumar (2017); Supranata and Iskandar (2013); Riadh et al. (2011) show that reliability has an influence on patient satisfaction. This research is also supported by study by Adhytyo and Mulyaningsih (2013) which states that reliability has a significant effect on patient satisfaction at the Kedunggalar Health Center, Ngawi Regency. The health center serves quickly and uncomplicatedly, and this result is also supported by research conducted by Suharmiati and Budianto which states that reliability or long waiting for service is the most influential variable on patient satisfaction, both outpatients and inpatients.

In addition, the results of the study conducted are also in line with Marzouq and Alqeed (2013) and Lianxi Zhou (2004) showing that the reliability dimension has a positive influence on consumer satisfaction. The higher the reliability, the higher the level of patient satisfaction.

2. The effect of tangible on satisfaction

The results of this study indicate that there is a tangible effect on patient satisfaction ($b = 0.28$; 95% CI = 0.14 to 0.42; $p < 0.001$).

These results also support the study by Riadh et al. (2011) with the finding that tangible has an influence on consumer satisfaction. Other study is Quddus and Hudrasyah (2014); Supranata and Iskandar (2013) Shaik dam Khan (2011) show that tangible has a positive relationship to patient satisfaction.

In other words, the better the tangible given to the patient, the better the patient's satisfaction, when the ANC puskesmas

patients have got what they need in terms of tangibles such as a neat, clean and comfortable examination room, neat appearance of employees and the availability of complete medical equipment and supplies. well, then the ANC puskesmas patients will feel satisfied with the services provided at the puskesmas.

3. The effect of empathy on satisfaction

The results of this study indicate that empathy based on mixed linear regression testing is included in the collinearity test / cannot be measured. Because it does not meet the collinearity so that the effect is not known.

From the results of the bivariate analysis, it shows that there is no statistically significant relationship between empathy and ANC patient satisfaction.

The results of this study are not in line with the servqual model (Parasuraman et al., 2018) which states that the empathy dimension has an influence on patient satisfaction. This may be due to data collection with respondents with different views and backgrounds. ANC patients do not bother with the midwife's empathy, possibly because of lack of knowledge and they live in the village. If it is seen from the univariate data, some of them only have high school/vocational education. In addition, most of the ANC patient's pregnancy visits were < 5 times, and their family income was mostly < 3 million, so they did not understand the midwife's empathy.

The dimensions of empathy assessed in ANC patients at the Klaten health center include friendly, courteous service, provision of time and services that suit their needs.

4. The effect of responsiveness on satisfaction

The results of this study indicate that there is an effect of responsiveness on patient

satisfaction ($b= 0.17$; 95% CI= 0.07 to 0.27; $p= 0.001$).

These results are in line with research conducted by Ravichandran & Mani (2010), Zhou (2004); Riadh et., al (2011) with the finding that responsiveness has an influence on consumer satisfaction. In other words, the higher the responsiveness, the higher the patient's satisfaction and indicates that when the ANC patient at the puskesmas has gotten what he needs, he will naturally be satisfied with the services provided by the puskesmas. The results of this study are also supported by research conducted by Azkha and Elnovriza (2006) which states that responsiveness has a significant effect on patient satisfaction at the Puskesmas in the city of Padang.

The dimension of responsive service quality refers to the desire of the puskesmas to assist patients in providing good, quality, and fast services. This is also a very important dimension, because every patient feels more valued if they get the best quality in service (Hernon & Nitecki, 2001).

According to Wijoyo (1999) that the attitude of a health care worker is one of the factors that determine whether the services provided are of good quality or not, so that the attitude of the officers who are friendly and kind in providing services can be a determinant of the recovery of a patient, otherwise the attitude of the officers who are rudeness can reduce patient satisfaction with the services they receive.

5. The effect of assurance on satisfaction

The results of this study indicate that there is an effect of assurance on patient satisfaction ($b= 0.16$; 95% CI= 0.04 to 0.28; $p= 0.007$).

Assurance refers to the skills and abilities of employees and whether these skills and abilities earn the trust of customers (patients), if the patient is

satisfied with the employee's performance at the clinic, then the patient will return to make a purchase. Assurance also involves features such as competence, courtesy, effective communication and attitude to serve customers (patients) effectively and efficiently. In addition, the Servqual assurance dimension indicates organizational competence, courtesy given to patients and operational safety. Assurance has an influence on consumer satisfaction (Ladhari et al., 2011). The higher the assurance, the higher the level of patient satisfaction.

The results of this study are in line with study conducted by Darmawansyah et al. (2013), which states that service guarantees have a relationship with patient satisfaction using social health insurance in inpatient services at the Lakipada Hospital. And also research conducted by Adhytyo and Mulyaningsih (2013), guarantees have a relationship with patient satisfaction.

AUTHOR CONTRIBUTION

Leny Rahmawati is the main researcher who plays a role in collecting research data, formulating research articles, and processing data. Didik Tamtomo plays a role in the formulation of the discussion. Bhisma Murti plays a role in formulating the framework of thought, research methods and data processing.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

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