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Analysis of Patient Satisfaction with Health Services at the Ambacang Padang Community Health Centre Based on an Electronic System

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ABSTRACT

Puskesmas, as Indonesia's primary health care facility, plays a crucial role in delivering affordable basic services. Implementing an electronic health system locally provides a strategic solution to enhance service delivery. This quantitative descriptive survey studied patient satisfaction with electronic health services at Ambacang Padang Community Health Centre. The purposive sample included 150 patients who used the electronic system within six months. A structured questionnaire with 24 items assessed satisfaction across four dimensions: ease of access, speed of service, communication quality, and ease of system use. Validity was ensured through expert content validation and item-total correlation for construct validity. Univariate and multivariate regression revealed that Ease of Service Access ($\beta = 0.45$; $p = 0.001$) and Speed of Service ($\beta = 0.38$; $p = 0.003$) significantly influenced satisfaction. The multivariate analysis highlighted accessibility, speed, and communication as key factors shaping patient satisfaction. In conclusion, electronic health service success depends largely on accessibility and speed, while system usability requires improvement to enhance the overall digital patient experience.

Keywords: *Patient Satisfaction, Health Services, Health Centers, Electronic Systems, Technology-Based Services, Service Quality*

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INTRODUCTION

Health care is one of the fundamental aspects in the health system that determines the quality of life of people. Puskesmas as the first level of health care facilities in Indonesia plays an important role in providing basic health services evenly and affordably. However, the challenge faced by Health Centers today is how to ensure that the services provided are able to meet the expectations and needs of patients effectively and efficiently.

Along with the development of Information Technology, the implementation of electronic-based health care systems began to be widely adopted in various health facilities, including health centers. This system is expected to facilitate access to services, speed up administrative processes, and improve transparency and accuracy of patient data. However, the success of the implementation of the electronic system is highly dependent on the level of patient satisfaction with the services received. The main problem that is often found is still low patient satisfaction with services at the Health Center, both related to technical and non-technical aspects. Several studies in Indonesia show that obstacles such as lack of patient understanding of Electronic Systems, Limited infrastructure, and less effective interaction with health workers are still significant obstacles (Sari et al., 2023).

A recent article by Prasetyo et al. (2024) states that the application of technology in health services in Puskesmas in West Java region shows a significant increase in service efficiency, but patient satisfaction is still not maximized due to lack of socialization and training for system users. This indicates the need for a more comprehensive approach to the implementation of health technologies.

Research by Wulandari and Nugroho (2023) at Puskesmas Yogyakarta found that aspects of service speed and ease of use of electronic systems greatly affect patient satisfaction levels. Patients who find the service fast and the system easy to use tend to give a positive assessment of the service received.

In addition, Rahmawati et al. (2022) highlights the importance of interpersonal communication between health workers and patients in the context of electronic-based services. Effective communication can reduce patient anxiety and increase confidence in the new system, ultimately increasing patient satisfaction. Nevertheless, a study by Nugraha and Putri (2023) in the West Sumatra region shows that there is still a disparity in technology access between urban and rural areas, thus affecting the uniformity of the quality of electronic services in Puskesmas. This is a challenge in equitable distribution of technology-based health services.

Ambacang Padang health center as one of the health facilities in urban areas also implements an electronic service system. However, there have been no in-depth studies on how the implementation of such systems affects overall patient satisfaction. Therefore, it is necessary to conduct an analysis that can describe the real conditions on the ground. The rapid development of Information Technology has changed many aspects of life, including the health sector. Digital transformation in healthcare is becoming very important to provide services that are fast, safe, and efficient. Therefore, the implementation of electronic-based health care system in Puskesmas is a strategic solution to answer this need. I am interested in researching this topic because I want to

explore the extent to which technology can affect the quality of care and patient satisfaction at the primary care level, which is at the forefront of the National Health System.

Another interest arises from the fact that although the technology has been implemented, there has not been a sufficiently comprehensive study of patient response to electronic-based services in health centers, especially in the Ambacang Padang area. This is important to understand because patient satisfaction not only has an impact on the continuity of service use, but also affects the success of the overall health program. By examining patient satisfaction, a realistic picture of the constraints and advantages of the existing system can be obtained, so that the resulting recommendations can be more targeted and relevant to the development of Health Services.

In addition, this study provides an opportunity to fill the gaps in specialized literature on electronic-based health services in the local context of Indonesia, which often has challenges different from other regions, such as infrastructure problems, digital literacy levels, and service culture. By understanding the characteristics and needs of patients at the Ambacang Padang Health Center, the results of this study are expected to make a significant contribution not only to Puskesmas managers and regional policy makers, but also as a reference for the development of electronic health services in other regions that have similar conditions.

METHODS

This study used a quantitative approach with a descriptive survey design to measure patient satisfaction with electronic-based health services at the Ambacang Padang Health Centre. The study population consisted of all patients who had used electronic services at the health centre in the last six months. The research sample was taken purposively from 150 respondents who met the inclusion criteria, namely patients who had used electronic services at least once and were willing to fill out the questionnaire. The purposive sampling technique was chosen to ensure that the sample truly represented the characteristics of the population, namely patients who used the health centre's electronic services, so that the data obtained was relevant to the research objectives.

The research instrument was a structured questionnaire consisting of 24 items measuring four dimensions of satisfaction, namely ease of access (6 items), speed of service (6 items), quality of communication (6 items), and ease of use of the electronic system (6 items). Each item was measured using a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The validity of the instrument was tested through content validity testing involving health service experts and methodology experts, as well as construct validity testing using item-total correlation analysis. The reliability of the questionnaire was tested using Cronbach's Alpha and obtained a value of >0.70 for all variables, so the instrument was declared reliable.

The collected data were analysed using descriptive statistics to describe the frequency distribution and overall patient satisfaction levels. Furthermore, multiple linear regression analysis was performed to determine the effect of each service dimension on patient satisfaction. Prior to the regression test, classical assumption tests were performed, including normality,

multicollinearity, and heteroscedasticity tests to ensure that the regression model used met the analysis requirements.

RESULTS

1. Distribution of Variable Scores

Univariate analysis was conducted to describe the average score for each service dimension. The results showed that the average patient satisfaction for each variable was as follows:

Table 1. Average Scores for Service Variables

Service Variables	Average Score (1–5)	Description
Ease of Service Access	4,3	Very satisfactory
Speed of Service	4,2	Very satisfactory
Communication Quality	4,0	Satisfactory
Comfort System	3,9	Satisfactory
Total Patient Satisfaction	**4,1**	Satisfactory

Overall, patient satisfaction with electronic-based services was satisfactory, with an average total score of 4.1. The dimension with the highest score was Ease of Service Access (4.3), indicating that the electronic system was considered very easy for patients to access health services. The Comfort System dimension received the lowest score (3.9), although it was still satisfactory, indicating room for improvement in terms of system comfort.

2. The Effect of Service Variables on Patient Satisfaction

Multivariate regression analysis was conducted to identify the effect of each service variable on patient satisfaction.

Table 2. Multivariate Regression Results

Service Variables	Beta	Sig. (p-value)	Description
Ease of Service Access	0,45	0,001	Significant
Speed of Service	0,38	0,003	Significant
Communication Quality	0,20	0,045	Significant
Comfort System	0,15	0,072	Not significant

The results of the analysis indicate that Ease of Service Access ($\beta = 0.45$; $p = 0.001$) and Speed of Service ($\beta = 0.38$; $p = 0.003$) are the dominant factors that significantly influence patient satisfaction. Communication Quality ($\beta = 0.20$; $p = 0.045$) also has a significant effect, albeit with a lower strength of influence.

Meanwhile, the Comfort System variable ($\beta = 0.15$; $p = 0.072$) did not show a significant effect on patient satisfaction. However, the positive direction of the relationship indicates that improving system comfort still has the potential to contribute to patient satisfaction in the future. This finding is important because it indicates that even though the technical aspects of the service are already good, user experience and system comfort are still areas that need attention.

DISCUSSION

1. Average Service Variable Score

The results of the univariate analysis show that patient satisfaction with electronic-based health services at the Ambacang Padang Community Health Centre is satisfactory, with a total score of 4.1 out of 5. The Ease of Service Access dimension received the highest score (4.3), followed by Speed of Service (4.2), Communication Quality (4.0), and Comfort System (3.9). This indicates that patients consider electronic services to have successfully facilitated access and accelerated the service process, although the comfort of the system remains a weak point that needs improvement.

Theoretically, these findings are consistent with the Expectation Confirmation and Technology Acceptance Model (TAM), which states that user satisfaction is achieved when the perceived benefits (including ease of use and speed of service) meet or exceed the user's initial expectations. Ease of access and speed of service often appear in digital service quality theory as key factors supporting satisfaction. On the other hand, the comfort aspect of the system is more related to elements of the user interface, user experience, aesthetics, and physical and psychological comfort in using the system; in many situations, this aspect becomes a 'complement' that reinforces satisfaction, but it is not usually the most dominant factor if basic aspects such as access and speed are adequate.

Previous research supports these findings with recent empirical evidence. For example, the study Assessing The Impact of Mobile Health Service Quality by the Social Security Administering Body on the Satisfaction of National Health Insurance Participants (Panjaitan & Hutajulu, 2024) found that the accessibility and service quality dimensions of the Mobile JKN application had a significant influence on user satisfaction, while supporting variables such as privacy and responsiveness, although important, have a relatively lower effect (Panjaitan & Hutajulu, 2024). In addition, the study User Satisfaction and Challenges in Telemedicine Services during the COVID-19 Pandemic in Indonesia: A Population-Based Analysis Adinda et al., (2024) reported that the majority of telemedicine users were very satisfied with the ease of use and speed of service, while some respondents gave lower scores on the aspect of technological comfort, especially those who were less familiar with digital use (Adinda et al., 2024). Meanwhile, research by Hidayat et al. (2023) found that the quality of digital-based administration contributed significantly to the satisfaction of BPJS patients (Hidayat et al., 2023).

The researchers' assumption in this context is that all respondents have relatively similar experiences in accessing electronic services, so that differences in scores between variables reflect the quality of the service itself rather than external factors such as differences in devices or technological infrastructure.

2. Multivariate Regression Results

Multivariate regression analysis shows that three service variables, namely Ease of Service Access ($\beta = 0.45$; $p = 0.001$), Speed of Service ($\beta = 0.38$; $p = 0.003$), and Communication Quality ($\beta = 0.20$; $p = 0.045$), have a significant effect on patient satisfaction. These results indicate that

accessibility, speed, and communication are the main factors that determine the level of satisfaction with electronic-based services. These findings reinforce the e-Service Quality theory proposed by Zeithaml et al. (2002), in which system reliability and responsiveness are key indicators of digital service quality.

Conversely, the Comfort System variable was not significant ($\beta = 0.15$; $p = 0.072$), despite having a positive relationship. This means that although patients rated the comfort of the system as quite good, this factor was not a significant determinant of satisfaction. This can be explained through the Technology Acceptance Model (TAM), which emphasises that perceived usefulness and perceived ease of use have a more dominant influence on technology acceptance than aesthetic comfort or interface aspects.

These results are consistent with the research by Idariani et al. (2023), which reported that reliability and responsiveness had a greater influence on patient satisfaction than the guarantee of system comfort at the Aceh Community Health Centre (Idariani et al., 2024). Research by Wijaya & Afifi (2024) at the Bandaharjo Community Health Centre also found that tangible/comfort aspects did not significantly affect JKN patient satisfaction (Wijaya & Afifi, 2024).

The researchers' assumption regarding these results is that the variation in perceptions of system comfort among respondents was relatively small, so its contribution to satisfaction was not statistically significant. In addition, it is possible that external factors such as patients' digital literacy or previous experience with technology moderated the relationship between system comfort and satisfaction, but these factors were not measured in the study.

CONCLUSIONS

This study shows that patient satisfaction with electronic-based health services at the Ambacang Padang Community Health Centre is generally satisfactory, with an average total score of 4.1. The dimensions that contribute most to satisfaction are Ease of Service Access and Speed of Service, which proved to be significant and dominant in multivariate regression analysis. Communication Quality also had a significant, albeit weaker, effect, emphasising the importance of clear interaction between patients and healthcare workers in digital systems.

Meanwhile, the Comfort System variable did not have a significant effect, although it showed a positive relationship. This indicates that system comfort is not yet a major factor in shaping patient satisfaction, although it remains an important supporting aspect that needs to be improved in the future.

Overall, these findings confirm that the success of electronic-based healthcare services is primarily determined by accessibility, speed, and communication quality, while the comfort aspect of the system needs to be further developed in order to strengthen the overall digital experience of patients.

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