

PATIENT SATISFACTION WITH CARDIAC CATHETERIZATION SERVICES

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Abstract

Despite the increasing emphasis on patient satisfaction as a key indicator of healthcare quality, there remains a lack of studies specifically examining satisfaction levels among cardiac catheterization patients, particularly across different procedural stages. This study aims to determine patient satisfaction with cardiac catheterization services. This study used an analytic descriptive design. Samples involved in this study were patients who undertook catheterization from May to June 2024 with a total of 44 respondents selected using total sampling. The variable of this study was patient satisfaction with cardiac catheterization services measured using a questionnaire developed by the researcher. It was validated with an R-value of 0.039 and a Cronbach value of 0.940. Data were analyzed using descriptive analysis. The result of the study showed that most of the respondents' age were late elderly (43.2%), male (72.7%), and high school education (52.3%). The majority of respondents were satisfied with the pre-catheterization stage (81.8%), the intra-catheterization stage (90.9%), and the post-catheterization stage (81.1%). The majority of respondents (86.4%) were satisfied with the cardiac catheterization services that had been carried out. Moreover, based on the characteristics of the respondents, elderly respondents were satisfied (94.7%), more male respondents stated satisfied (87.5%), and respondents with high school education (91.3%). The level of satisfaction was based on the stages of action in each dimension of satisfaction, and in general, the respondents were satisfied with the service. Patient satisfaction has a vital role in the outcome of health services, and it is an indicator of the service and management of health institutions.

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INTRODUCTION

Patient satisfaction is a crucial indicator for assessing the quality of healthcare services, including medical procedures like cardiac catheterization. This satisfaction reflects the extent to which services meet patient expectations, which influences the quality of service and the reputation of healthcare institutions^{1,2}. Patients feel satisfied when the services meet or exceed their expectations^{3,4}.

High-quality healthcare is not only evaluated from the technical medical aspect but also from patients' perceptions of service quality, which includes administrative processes, interactions with medical personnel, and the comfort of available facilities.

However, some aspects, such as communication gaps, waiting times, and facility limitations, remain challenges in achieving optimal patient satisfaction, particularly in cardiac catheterization services. Previous research has shown that patient satisfaction is directly related to various factors, such as service quality, care costs, communication, and the availability of facilities^{5,6}. Furthermore, satisfaction among cardiac catheterization patients is influenced by effective communication, clear information, and comfort during the medical procedure⁷. Cardiac catheterization is a non-surgical intervention procedural to diagnose coronary heart disease, it plays a vital role in heart disease management.

Data from the World Health Organization (WHO) indicate that cardiovascular diseases are the leading

cause of global mortality, with more than 17 million people dying annually from these diseases⁸. In Indonesia, according to the Basic Health Research (Risikesdas) 2018 results, approximately 2.78 million individuals, or 15 per 1000 people suffer from heart disease, with the numbers increasing annually (Ministry of Health of the Republic of Indonesia, 2018).

The increasing number of heart disease cases underscores the importance of quality cardiac catheterization services, which include preparation, execution, and post-procedure care. Patient satisfaction is influenced by factors such as simple language, emotional support, and careful education⁷. Additionally, adequate facilities and infrastructure, including ready-to-use equipment and the appearance of medical staff, also play a crucial role. Dissatisfaction may arise if facilities, such as room lighting and bathroom water supply, are inadequate, which affects patient comfort¹⁰.

Research conducted by Weideman and Klewer at University Hospital Waterford, Ireland revealed that although many patients were satisfied with cardiac catheterization services, several aspects need improvement, such as waiting times and comfort during the procedure¹¹. A study by Ancha and Tambunan stated that good service behaviour can enhance patient satisfaction¹². Therefore, improving service quality is essential to meet patient expectations and enhance service outcomes¹³.

Cardiac catheterization services at Arifin Achmad Regional General Hospital (RSUD Arifin Achmad) in Pekanbaru, which has become one of the referral hospitals in Riau Province, play a critical role in providing this medical service. Interviews with patients who underwent cardiac catheterization procedures revealed several complaints. One patient expressed difficulty completing administrative paperwork due to a lack of understanding and new experience. Another patient found the administrative procedures not too difficult but complained about the long waiting times for inpatient registration. Meanwhile, another patient lamented the long and extensive queue for scheduling the

procedure. Based on these descriptions, there is a need for research related to patient satisfaction with cardiac catheterization at Arifin Achmad Regional General Hospital.

METHOD

This study used an analytic descriptive design with a sample of patients who underwent cardiac catheterization at Arifin Achmad Regional General Hospital during the research period, this study aims to evaluate the level of patient satisfaction with cardiac catheterization services at three stages of the procedure: pre-catheterization, intra-catheterization, and post-catheterization. totalling 44 respondents selected through total sampling. The variable measured was patient satisfaction with cardiac catheterization services. The instrument used was a patient satisfaction questionnaire developed by the researchers, with a reliability r-value ranging from 0.465 to 0.722 a critical r-value of 0.444 (df-2), and a Cronbach’s alpha validity of 0.940. The questionnaire comprised 30 statements covering three stages of cardiac catheterization service: pre-catheterization, intra-catheterization, and post-catheterization, across five dimensions of patient satisfaction: reliability, empathy, tangibles, assurance, and responsiveness. Each stage pre, intra, and post-catheterization had 10 questions, with 2 questions per dimension.

RESULTS AND DISCUSSION

This study presents the results by describing the demographic characteristics of the respondents involved and presenting findings related to the variables measured in this research.

Table 1 Frequency Distribution of Respondents Based on Age, Gender, and Highest Level of Education

Respondent Characteristics	Number (n)	Percentage (%)
Age of Respondents		
1. Late Adult (36-45 years)	8	18.2
	17	36.6
	19	43.2

2. Early Elderly (46-55 years)		
3. Late Elderly (>56 years)		
Gender		
1. Male	32	72.7
2. Female	12	27.3
Education of Respondents		
1. Elementary School	8	18.2
2. Junior High School	5	13.6
3. High School	23	52.3
Bachelor's Degree	7	15.9
Total	44	100

Source: Primary Data

Table 1 indicates that the majority of the respondents fall into the late elderly category (>56 years), with 19 respondents (43.2%). The predominant gender is male, comprising 32 respondents (72.7%), and the most common level of education among the respondents is high school, with 23 respondents (52.3%).

Overview of Patient Satisfaction by Stage

Table 2 Patient Satisfaction by Stage for Cardiac Catheterization Services

Stage	Satisfaction Level				Total	
	Satisfied		Somewhat Satisfied		n	%
	N	%	N	%		
Pre-Catheterization	36	81.8	8	18.2	44	100
Intra-Catheterization	40	90.9	4	9.1	44	100
Post-Catheterization	36	81.8	8	18.2	44	100

Source: Primary Data

Table 2 shows the research results indicating that at the pre-catheterization stage, most of the respondents had a satisfied score (81.8%), with the reliability dimension being the most dominant aspect (77.7%). High satisfaction in this dimension indicates the importance of patient trust in the professionalism of medical personnel, both in handling administration and providing explanations about the procedures. Research by Ancha and Tambunan supports this, stating that the medical staff's ability to answer questions and alleviate patient concerns before the procedure is a crucial factor that can enhance patient satisfaction¹². Similarly, Farida, Asrinawaty, and Anwari found a significant relationship

between the reliability dimension and patient satisfaction levels¹⁴.

At the intra-catheterization stage, most respondents felt satisfied (90.9%) with the highest satisfaction in the assurance dimension (79.5%). It indicates that the assurance of service quality, including accurate scheduling and patient identification, provides security to patients. This finding aligns with Ancha and Tambunan's research, which found that assurance is one of a crucial dimensions to support invasive procedures like cardiac catheterization, where patients require trust and certainty regarding the medical team handling them¹². Tjiptono and Diana emphasized that assurance can enhance the service provider through adequate facilities, effective communication, and patient safety and privacy during the service process¹⁵.

However, at this stage, there is an aspect of empathy with a lower satisfaction level (61.4%). The empathy dimension is measured by the attitude of care and the ability of medical personnel to provide information in a way that patients can understand. This finding is consistent with the study by Ancha and Tambunan, which underscores the importance of medical personnel showing concern for the physical and emotional needs of patients, ultimately impacting patients' perceptions of service quality.

At the post-catheterization stage, most respondents also felt satisfied (81.8%), particularly with the empathy dimension (77.3%). This satisfaction was driven by the medical staff's attention to the emotional needs of patients, including the opportunity to ask questions and discuss, which provided a sense of being valued by patients and their families. This is supported by the research of Asrinawaty and Anwari¹⁴, which found that high empathy contributes to increased patient satisfaction, especially after invasive procedures when the need for emotional support is higher.

Conversely, the responsiveness dimension at this stage received a lower satisfaction rate (59.1%), particularly concerning the speed of medical staff's response to patient needs. Good responsiveness not only provides a

sense of security but also enhances patient trust in the service provider’s ability to deliver timely and effective care. Ancha and Tambunan noted that quick and appropriate responsiveness to patient complaints can enhance patient confidence in the received services ¹².

Based on the researchers’ assumptions, this study emphasizes the importance of reliability, assurance, and empathy in enhancing patient satisfaction in cardiac catheterization procedures. However, the responsiveness aspect requires further attention to ensure that all dimensions of satisfaction are optimally fulfilled.

Overview of Patient Satisfaction

Table 3 Patient Satisfaction with Cardiac Catheterization Services

Satisfaction Level	Number (n)	Percentage (%)
1. Somewhat Satisfied	6	13.6
2. Satisfied	38	86.4
Total	44	100

Source: Primary Data

Table 3 of this study shows that most respondents (86.4%) felt satisfied with the cardiac catheterization services across five dimensions: reliability, empathy, tangibles, assurance, and responsiveness. The dimensions of reliability and empathy achieved the highest satisfaction levels (77.3%), indicating that the dependability and emotional attention provided by medical staff have a significant impact on patient experience. On the other hand, the responsiveness dimension received the lowest satisfaction rate (59.1%), pointing to the need for improvements in the speed and responsiveness of medical staff. The variation in satisfaction levels reflects the subjective perception of patients, influenced by their expectations and personal experiences with healthcare services, as defined¹⁶. These results align with previous research indicating that pre-catheterization education through video media can enhance understanding and reduce patient anxiety, crucial factors in the success of the procedure ^{17,18}. Additionally, aspects such as cleanliness, communication ethics, and the politeness of medical personnel were identified as factors enhancing patient

satisfaction in various international cardiac catheterization service centres¹¹.

Overview of Patient Satisfaction Based on Respondent Characteristics

Table 4 Patient Satisfaction with Cardiac Catheterization Services Based on Respondent Characteristics

Respondent Characteristics	Score Categories				Total	
	Satisfied (n)	Percentage (%)	Somewhat Satisfied (n)	Percentage (%)	(n)	(%)
Age of Respondents						
1. Late Adult (36-45 years)	7	87.5	1	12.5	8	100
2. Early Elderly (46-55 years)	13	76.5	4	23.5	17	100
3. Late Elderly (>56 years)	18	94.7	1	5.3	19	100
Gender						
1. Male	28	87.5	4	12.5	32	100
2. Female	10	83.3	2	16.7	12	100
Education of Respondents						
1. Elementary School	8	100	0	0	8	100
2. Junior High School	6	100	0	0	6	100
3. High School	21	91.3	2	39.1	23	100
4. Bachelor’s Degree	3	42.9	4	57.1	7	100

Source: Data Primer

Based on Table 4, it showed that the majority of respondents who were satisfied with the cardiac catheterization services fall into the late elderly category (94.7%), are male (87.5%), and have a high school education (91.3%). Conversely, the early adult group showed a lower satisfaction rate (87.5%). It is consistent with research by Araujo, which stated a relationship between age and patient satisfaction with healthcare services¹⁹. Younger patients often have higher expectations, making it harder to satisfy older patients. While age increases, patients tend to be more realistic in evaluating services, which may explain why satisfaction levels are higher in the older age group. The researchers assume that maturity and life experience make older patients more accepting of circumstances and satisfied with the services provided.

Regarding gender, the findings of this study showed that the satisfaction level of women (83.3%) is slightly lower compared to men (87.5%). Research by Sihalo and Herlina also found that men are more readily satisfied with healthcare services²⁰. The researchers hypothesize that this difference may be due to women's tendency to prioritize emotional factors when evaluating a service. Meanwhile, men are more likely to assess with a more rational and objective approach. This difference influences their perceptions of the service and explains the variance in satisfaction levels between the two groups.

This study indicates that the satisfaction level among respondents with elementary and junior high school education is very high (100%), followed by those with a high school education (91.3%), and the lowest among respondents with a bachelor's degree (42.9%). This phenomenon aligns with findings by Araujo, which show a negative relationship between the level of education and patient satisfaction. Patients with higher education tend to be more critical in assessing the quality of healthcare services received²¹. It relates to the researchers' assumption that the higher their education level, the greater their expectations towards healthcare services, which in turn can reduce satisfaction levels if the services do not meet the standards they expect.

Based on the researchers' assumptions, this study provides important insights into how demographic factors such as age, gender, and educational level influence patient satisfaction perceptions towards cardiac catheterization services. Understanding these factors can aid healthcare professionals in enhancing service quality and tailoring their approach to meet patients' satisfaction.

CONCLUSION

This study has shown that patient satisfaction with cardiac catheterization services encompasses various stages, from pre-catheterization through intra-catheterization to post-catheterization, analyzed across multiple dimensions of satisfaction. Overall, cardiac

catheterization services have met patient expectations. This underscores that patient satisfaction is a key factor in the success of medical procedures, not only impacting the quality of patient recovery post-procedure but also serving as a crucial indicator for institutions in evaluating and enhancing the quality of services and overall health management. Based on these findings, healthcare providers can improve cardiac catheterization services by enhancing communication strategies, tailoring approaches based on patient demographics, and optimizing service quality at each procedural stage. Implementing patient-centered care, providing clear information, and addressing individual needs can further enhance satisfaction levels, ultimately improving patient outcomes and institutional service standards.

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