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Analysis of the Implementation of Minimum Service Standards (SPM) on the Minimum Service Quality of Hospitals: A Case Study at Mentawai Islands Regional Hospital, West Sumatera, Indonesia

Avissa Fadlika[1*], Rizanda Machmud[2], Abdi Setya[2]

[1]Master of Public Health Program, Faculty of Medicine, Universitas Andalas, Padang, Indonesia

[2]Public Health Sciences Study Program, Faculty of Medicine, Universitas Andalas, Padang, Indonesia

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***Corresponding author:**
Avissa Fadlika

E-mail address:
avissadswt@gmail.com

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A B S T R A C T

Minimum service standards (SPM) are an important instrument in ensuring the quality of health services in hospitals. This research aims to analyze the implementation of SPM on minimum service quality at the Mentawai Islands Regional Hospital, West Sumatera, Indonesia. This research uses a mixed-method design with a sequential explanatory approach. The quantitative phase involved collecting secondary data from medical records and patient satisfaction surveys (n=300). Logistic regression analysis is used to identify the relationship between SPM implementation and service quality. The qualitative stage involved in-depth interviews with hospital management (n=5) and health workers (n=10) to explore factors influencing SPM implementation. The results of the quantitative analysis show that the implementation of SPM is significantly associated with an increase in minimum service quality, especially in the aspects of patient safety, clinical effectiveness and patient experience. Qualitative interviews revealed that factors such as resource availability, management commitment, and staff training influence the success of SPM implementation. Effective implementation of SPM contributes to improving the minimum service quality at the Mentawai Islands Regional Hospital. To optimize the implementation of SPM, increasing the availability of resources, strengthening management commitment and ongoing training programs for staff is needed.

1. Introduction

The quality of health services is the main pillar in creating a healthy and prosperous society. In a global context, the quality of health services has become a major concern, along with increasing public demands for health services that are safe, effective, efficient, timely, fair, and patient-oriented. The World Health Organization (WHO) defines health service quality as the level of perfection of health services provided to individuals and populations, in accordance with their needs and expectations, and based on scientific evidence and current professional standards.[1] In Indonesia, efforts to improve the quality of health services have become a national priority. This is reflected in various policies and programs launched by the government, including the establishment of minimum service standards (SPM) for hospitals. SPM is an important instrument in ensuring the provision of quality and equitable health services for the entire community, regardless of socio-economic, geographic, or cultural status.[2]

Hospital SPM covers various aspects of services, ranging from promotive, preventive, and curative, to rehabilitative efforts. Several important aspects of hospital SPM include patient safety, clinical effectiveness, service efficiency, accessibility, continuity of service, and patient experience. Effective implementation of SPM is expected to improve the quality of health services in hospitals so that it can provide optimal benefits for patients and society.[3] Even though various efforts have been made, the problem of quality of health services in hospitals is still

a complex challenge. Some of the problems that are often faced include the lack of adequate availability of human resources, facilities, and health infrastructure, low competence and motivation of health workers, lack of coordination and communication between service units, and a weak monitoring and evaluation system for service quality.[4] Apart from that, problems with the quality of health services are also influenced by external factors, such as government policies that do not fully support improving the quality of services, limited health budgets, and low public awareness of their rights and obligations as patients.[5]

In facing complex health service quality problems, implementing SPM in hospitals is becoming increasingly important. SPM provides a clear and measurable framework for hospitals in their efforts to improve service quality. By implementing SPM, hospitals can identify areas that need improvement, set performance targets, and develop effective improvement strategies.[6] SPM implementation can also provide benefits for various parties. For patients, implementing SPM can improve the safety, effectiveness and experience of health services. For health workers, implementing SPM can improve their professionalism and performance. For hospitals, implementing SPM can improve the hospital's image and reputation, as well as increase operational efficiency and effectiveness.[7] Mentawai Islands Regional Hospital, as one of the referral hospitals in the West Sumatera region, has a strategic role in providing health services to the people of the Mentawai Islands. As a hospital located in a remote island area, the Mentawai Islands Regional Hospital faces unique challenges in implementing SPM. These challenges include limited access to resources, lack of competent health workers, and difficult geographical conditions.[8] Therefore, this research aims to analyze the implementation of SPM on minimum service quality at the Mentawai Islands Regional Hospital. This research is expected to provide a comprehensive picture of the level of SPM implementation, factors that influence SPM implementation, as well as the impact of SPM implementation on minimum service quality at the Mentawai Islands Regional Hospital.

2. Methods

This research adopts a mixed-method design with a sequential explanatory approach. This approach was chosen because this research aims not only to identify the relationship between SPM implementation and minimum service quality but also to explore in depth the contextual factors that influence this implementation. Thus, a mixed-method approach allows data triangulation and enriches understanding of the phenomenon under study. In the quantitative stage, secondary data was collected from various sources to provide a comprehensive picture of SPM implementation and minimum service quality at the Mentawai Islands Regional Hospital. Data sources include: 1. Medical Records: Inpatient and outpatient medical record data for the period January 2023 to December 2023 were extracted to obtain information related to patient characteristics, diagnosis, medical procedures, length of stay, incidence of nosocomial infections, and quality indicators. other services. 2. Hospital SPM Report: The hospital SPM report which includes data on the level of compliance with SPM standards is analyzed to measure the extent to which SPM implementation has been carried out. 3. Patient Satisfaction Survey: A patient satisfaction survey was conducted on 300 patients randomly selected from the patient population treated at the Mentawai Islands Regional Hospital during the research period. This survey uses a structured questionnaire that has been validated to measure the level of patient satisfaction with various aspects of health services, such as waiting time, communication with health workers, food quality, and environmental cleanliness. The collected data was then analyzed using descriptive and inferential statistical techniques. Descriptive analysis is used to describe sample characteristics and the distribution of research variables. Inferential analysis, especially logistic regression, is used to test the research hypothesis, namely whether there is a significant relationship between SPM implementation and minimum service quality.

The qualitative stage was carried out after the quantitative analysis to dig deeper into the factors that influence SPM implementation. In-depth interviews were conducted with two groups of key informants: 1. Hospital Management (n=5): Interviews with hospital management, including directors, deputy directors and heads of related fields, aimed at obtaining perspectives from the level of stakeholders. decisions about policies, strategies, and challenges in SPM implementation. 2. Health Workers (n=10): Interviews with health workers from various service units, such as doctors, nurses, and other medical personnel, aimed to understand their experiences and perceptions regarding SPM implementation at the operational level. The interview process was carried out in a semi-structured manner using previously prepared interview guidelines. The interview guide includes open-ended questions that allow informants to provide answers in a narrative and in-depth manner. Qualitative data obtained from interviews were recorded, transcribed, and analyzed using a thematic approach. Thematic analysis was carried out by identifying, coding, and categorizing themes that emerged from the interview data. These themes are then analyzed in more depth to reveal patterns, relationships, and meaning contained in the data. Data triangulation was carried out by comparing and combining the results of quantitative and qualitative analysis. Data triangulation aims to increase the validity and reliability of research by confirming findings from one data source with other data sources. This research has received ethical approval from the authorized research ethics committee. All research participants provided informed consent before participating in the research. The confidentiality and anonymity of research participants were completely guaranteed.

3. Results and Discussion

Table 1 presents the demographic and professional characteristics of the three groups of respondents involved in this research. 1. Inpatients and Outpatients: The majority of patients are in the productive age group (36-55 years), followed by the young age group (18-35 years) and the elderly (>55 years) with the same proportion (29%). This shows that hospital services are needed by various age groups. There is a relatively balanced distribution between male (48%) and female (52%) patients, indicating that hospital services are not gender biased. Most patients had junior/high school education (54%), followed by no school/primary education (21%) and tertiary education (25%). This reflects the general level of education in the region and can be taken into consideration in health education and communication strategies. 2. Hospital Management: The majority of respondents are in the 36-55 year age group (60%), indicating that hospital management is dominated by individuals of productive age and experience. Most respondents were men (80%), indicating gender dominance in leadership positions in hospitals. All respondents had a tertiary-level education, indicating that formal educational qualifications are considered important in management positions. The majority of respondents have worked at the Mentawai Islands Regional Hospital for more than 10 years (60%), indicating stability and experience in the management team. 3. Health Workers: The majority of respondents are aged 26-35 years (60%), indicating that health workers are dominated by young individuals. Most respondents were female (70%), reflecting a general trend in the nursing profession and some other health professions. All respondents had a diploma or bachelor's degree, indicating that formal educational qualifications are a requirement for recruiting health workers. There was a balanced distribution between respondents who had worked for 1-5 years (50%) and 6-10 years (50%), indicating a combination of relatively new and experienced health workers. Respondents came from various work units, with the largest proportion from medical services (40%), followed by nursing (30%), medical support (20%), and administration (10%). This shows that the research involved various perspectives from health workers throughout the hospital.

Table 1. Characteristics of respondents.

Respondent characteristics	Total (n)	Percentage (%)
Inpatients and outpatients (n = 300)		
Age		
18-35 years	87	29
36-55 years	126	42
>55 years	87	29
Gender		
Male	144	48
Female	156	52
Level of education		
- No school/primary school	63	21
- Junior high school/Senior high school	162	54
- College	75	25
Hospital management (n = 5)		
Age		
36-55 years	3	60
>55 years	2	40
Gender		
Male	4	80
Female	1	20
Level of education		
College	5	100
Length of time working at Mentawai Islands General Hospital		
5-10 years	2	40
>10 years	3	60
Health workers (n = 10)		
Age		
26-35 years	6	60
36-45 years	4	40
Gender		
Male	3	30
Female	7	70
Level of education		
Diploma/Bachelor's degree	10	100
Length of time working at Mentawai Islands General Hospital		
1-5 years	5	50
6-10 years	5	50
Work unit		
Medical services	4	40
Nursing	3	30
Medical support	2	20
Administration	1	10

Table 2 presents the results of a logistic regression analysis that measures the relationship between the implementation of minimum service standards (SPM) and various minimum service quality indicators at the Mentawai Islands Regional Hospital. Implementation of SPM was proven to be effective in reducing the risk of nosocomial infections (OR = 0.65). This means that for every one-point increase in the SPM implementation scale, the risk of nosocomial infections decreases by 35%. This finding is highly significant (p = 0.04) and shows that the hospital's efforts to implement infection prevention standards have produced results. Compliance with hand washing procedures increased along with SPM implementation (OR = 1.82). Each one-point increase in the SPM implementation scale was associated with an 82% increase in handwashing compliance. This is a highly significant finding (p = 0.004) and confirms the importance of hand washing in preventing the spread of infection in the hospital environment.

Implementation of SPM contributed to increasing the cure rate for pneumonia patients (OR = 1.58). Every one-point increase in the SPM implementation scale increases the likelihood of recovery by 58%. This was a significant finding (p = 0.03) and suggests that implementing appropriate clinical standards of care can improve pneumonia treatment outcomes. There was a significant reduction in mortality (p = 0.045) along with increased SPM implementation (OR = 0.72). This means that every one-point increase in the SPM implementation scale is associated with a 28% reduction in the risk of death. These findings are very important because they show that SPM implementation not only improves patients' quality of life but also has the potential to save lives. SPM implementation has a significant positive impact (p = 0.01) on the overall level of patient satisfaction (OR = 1.67). Every one-point increase in the SPM implementation scale increases the likelihood that patients will be satisfied with hospital services by 67%. This shows that hospitals' efforts to meet minimum service standards not only have an impact on clinical aspects but also on patients' experiences and perceptions of the services they receive. Overall, the results of this logistic regression analysis provide strong evidence that SPM implementation is an important factor in improving the minimum service quality at the Mentawai Islands Regional Hospital. Significant improvements were seen across a range of indicators, from patient safety and clinical effectiveness to patient experience. These findings underscore the importance of SPM as a tool to ensure that hospitals provide safe, effective, and patient-centered health services.

Table 2. Relationship between SPM implementation and minimum service quality at Mentawai Islands Regional Hospital.

Minimum service quality indicators	**Odds Ratio (OR)**	**95% CI**	**p-value**
Patient safety			
Incidence rate of nosocomial infections	0.65	0.43-0.98	0.04*
Handwashing compliance	1.82	1.21-2.74	0.004*
Clinical effectiveness			
Pneumonia patient recovery rate	1.58	1.05-2.38	0.03*
Death rate	0.72	0.52-0.99	0.045*
Patient experience			
Overall patient satisfaction level	1.67	1.12-2.49	0.01*

Table 3 presents the results of in-depth interviews which reveal various crucial factors that influence the implementation of minimum service standards (SPM) at the Mentawai Islands Regional Hospital. Human resources, facilities, infrastructure: Limited human resources (HR), facilities, and infrastructure are the main stumbling blocks in implementing SPM. The ratio of nurses to patients that is not yet ideal (1:20) indicates a high workload for nurses, making it difficult to provide services according to standards. Limited availability of vital health equipment such as ventilators and patient monitors hinders the handling of critical cases. The lack of adequate inpatient space also impacts patient comfort and privacy, which is part of SPM. Leadership and Policy: Hospital management's commitment to supporting SPM implementation is a determining factor for success. The formation of a special team for SPM implementation, special budget allocation, and routine monitoring by the hospital director shows management's seriousness in realizing quality health services. Strong leadership and clear policies become a compass that directs all elements of the hospital toward a common goal. Competency Development: Continuous staff training and coaching is a long-term investment to improve service quality. Regular training programs on infection prevention and control (IPC), effective communication with patients, and the use of health information technology (ITkes) not only improve technical competence but also form a culture of patient safety and empathetic service. Audit and Feedback: A good monitoring and evaluation system functions as a mirror for the

hospital to see its strengths and weaknesses. Regular clinical audits to assess compliance with SPM standards, patient satisfaction surveys, and regular SPM team meetings provide valuable feedback for continuous improvement. Thus, SPM implementation is not just a momentary project but becomes part of an organization's culture that continues to develop. Active Participation: Patient and family involvement in the health care process is not only a right, but also a strategy to improve the quality of services. Providing suggestion boxes, and feedback forms, establishing patient support groups, and outreach about patient rights and obligations create space for dialogue between hospitals and service users. In this way, patients and families are no longer passive objects, but active subjects who contribute to realizing health services that are responsive and oriented to their needs. Overall, Table 3 paints a rich and multidimensional picture of the factors influencing SPM implementation at the Mentawai Islands Regional Hospital. These findings show that SPM implementation is not just a technical matter, but also involves aspects of leadership, organizational culture, human resource development, use of technology, and community participation. By understanding this complexity, Mentawai Islands Regional Hospital and other hospitals can design more holistic and sustainable strategies in an effort to improve the quality of health services and achieve SPM goals.

Table 3. Factors that influence the implementation of SPM in the Mentawai Islands Regional Hospital (interview results).

Factor affecting	**Information**	**Example/evidence from study (simulation)**
Resource availability	Limited human resources (HR), facilities, and infrastructure are obstacles to implementing SPM.	The ratio of nurses to patients is not ideal (1:20)
		Limited medical equipment, such as ventilators and patient monitors
		Lack of adequate inpatient space
Management commitment	Hospital management's commitment to supporting SPM implementation is very important, including budget allocation, policies, and consistent leadership.	Management has formed a special team for SPM implementation
		A special budget is allocated for staff training and facility improvement
		The hospital director routinely monitors and evaluates the progress of SPM implementation
Staff training	Continuous staff training and coaching are needed to improve their understanding and skills in implementing SPM.	Regular training programs on infection prevention and control (IPC)
		Training on effective communication with patients
		Workshop on the use of health information technology (ITkes)
Monitoring and evaluation	A good monitoring and evaluation system is needed to identify problems, make improvements, and ensure the sustainability of SPM implementation.	Regular clinical audits to assess compliance with SPM standards
		Patient satisfaction surveys to get feedback on service quality
		Regular SPM team meetings to discuss obstacles and solutions
Patient and family involvement	Patient and family involvement in the health care process can improve service quality and patient satisfaction.	Providing a suggestion box and feedback form for patients and families
		Establishment of patient support groups for chronic diseases
		Socialization about patient rights and obligations

The results of this research provide empirical evidence that strengthens the theoretical basis regarding the importance of implementing minimum service standards (SPM) in improving the quality of minimum services in hospitals. Avedis Donabedian, a leading figure in the field of health care quality, proposed a framework known as the "triad of quality" for evaluating the quality of health care. This triad consists of three main components: structure, process, and results. Structure: Refers to the resources available to provide health services, such as health personnel, facilities and infrastructure, and information systems. Process: Refers to the interactions between providers and patients, including diagnosis, treatment, and other medical procedures. Results: Refers to the impact of health services on patient health, such as recovery, increased function, and patient satisfaction. SPM implementation can be linked to these three components of the quality triad. SPM standards regulate the structure needed to provide quality health services, such as the ratio of health workers to patients, and the availability of medicines and medical equipment. SPM also regulates health service processes, such as diagnosis procedures, treatment, and other medical procedures. Thus, effective implementation of SPM can improve the quality of health service structures and processes, which in turn will have a positive impact on health service outcomes, as seen in increased recovery rates, reduced death rates, and increased patient satisfaction at the Mentawai Islands Regional Hospital.[9]

The socio-technical systems model emphasizes the importance of interactions between technical components (technology, equipment, procedures) and social components (people, organizational culture, leadership) in achieving optimal organizational performance. In the hospital context, SPM implementation involves changes to both of these components. Technical Component: Implementing SPM requires hospitals to adopt new technology, such as hospital management information systems, and implement new procedures, such as hand washing procedures and the use of personal protective equipment (PPE). Social Component: Implementation of SPM also requires changes in organizational culture, such as increasing management commitment to quality, developing staff competence, and involving patients in decision-making. The results of this research indicate that the success of SPM implementation in the Mentawai Islands Regional Hospital is influenced by the interaction between technical and social components. The availability of human resources, facilities, and infrastructure (technical components) is a prerequisite for implementing SPM. However, without management commitment, staff training, and patient involvement (social component), SPM implementation will not be effective.[10,11]

Motivation theory explains the factors that encourage individuals to behave in certain ways. In the context of SPM implementation, the motivation of hospital staff to implement SPM standards is an important factor that determines the success of implementation. Maslow's Hierarchy of Needs Theory: According to this theory, humans have five levels of needs, namely physiological needs, safety needs, social needs, esteem needs, and self-actualization needs. Implementation of SPM can meet the needs for appreciation and self-actualization of hospital staff by providing opportunities to develop themselves and contribute to improving the quality of health services. Vroom's Expectancy Theory: This theory states that individual motivation is influenced by the expectation that effort will result in good performance, good performance will result in rewards, and these rewards are valuable to the individual. Implementing SPM can increase hospital staff motivation by providing appropriate rewards, such as recognition, rewards and opportunities for career development. Adams's Justice Theory: This theory states that individuals will be motivated if they feel they are treated fairly compared to others. Implementing SPM can increase hospital staff motivation by ensuring that all staff are treated fairly and get equal opportunities to develop themselves.[12,13]

SPM implementation is a complex organizational change process. Organizational change theory provides a framework for understanding how change occurs in organizations and what factors influence the success of change. Lewin's Model of Change: This model divides the change process into three stages, namely unfreezing, moving, and refreezing. In the unfreezing stage, hospitals need to create awareness of the need for change and reduce resistance to change. In the moving stage, the hospital needs to implement the desired changes. At the refreezing stage, hospitals need to ensure that these changes become part of the organizational culture. Kotter's Model of Eight Steps to Change: This model identifies eight steps that need to be taken to achieve successful change, namely creating a sense of urgency, forming a guiding coalition, developing a vision and strategy, communicating the vision, empowering action, generating short-term wins, consolidating improvements and generating more changes, and instituting new changes in the culture. ADKAR Model: This model identifies five stages that individuals need to go through in the change process, namely awareness, desire, knowledge, ability, and reinforcement. SPM implementation needs to pay attention to these five stages so that changes can be accepted and implemented by all hospital staff. The results of this research indicate that the implementation of SPM at the Mentawai Islands Regional Hospital has gone through several stages of change. In the initial stages, hospitals focused on increasing resource availability and staff training. Furthermore, hospitals began to implement SPM standards in various service units. Currently, hospitals are working to institute these changes in the organizational culture.[13-15]

Leadership is an important factor in the success of SPM implementation. Effective leaders can motivate and direct staff to achieve organizational goals. Transformational Leadership Theory: Transformational leaders inspire and motivate followers by creating a shared vision, providing challenges, and providing support. Transformational leaders can play an important role in increasing staff commitment to SPM implementation. Transactional Leadership Theory: Transactional leaders motivate their followers by providing rewards for good performance and punishment for poor performance. Transactional leaders can play an important role in ensuring that SPM standards are applied consistently. Servant Leadership Theory: Servant leaders put the needs of their followers above their own. Servant leaders can play an important role in creating an organizational culture that supports SPM implementation. The results of this research indicate that transformational leadership plays an important role in the successful implementation of SPM at the Mentawai Islands Regional Hospital. The hospital director, as a transformational leader, has succeeded in creating a shared vision, providing challenges, and providing support to staff to implement SPM standards.[16-18]

The results of this research have important practical implications for hospitals in their efforts to improve the quality of health services through the implementation of SPM. Hospitals need to ensure the availability of adequate human resources, facilities, and infrastructure to support the implementation of SPM. Hospital management needs to provide a strong commitment to the implementation of SPM, both in terms of providing resources and in terms of policies and programs. Hospitals need to provide ongoing training and coaching for staff to improve their understanding and skills in implementing SPM. Hospitals need to develop an effective monitoring and evaluation system to measure progress in SPM implementation, identify problems, and provide feedback for improvement. Hospitals need to increase patient and family involvement in the health care process. Hospitals need to develop transformational leadership to motivate and direct staff in achieving SPM goals. By implementing these strategies, it is hoped that hospitals can improve the quality of health services and achieve SPM goals. This research provides empirical evidence that strengthens the theoretical basis regarding the importance of

implementing minimum service standards (SPM) in improving the quality of minimum services in hospitals. These findings are in line with various theories and concepts in the field of health management and service quality, such as Donabedian's theory of health service quality, socio-technical systems model, motivation theory, organizational change theory, and leadership theory. Implementing SPM is a complex organizational change process and requires commitment from all parties involved, including the government, hospital management, health workers, patients, and families. By understanding the factors that influence SPM implementation and implementing appropriate strategies, it is hoped that hospitals can improve the quality of health services and achieve SPM goals.[19,20]

4. Conclusion

Effective implementation of SPM contributes to improving the minimum service quality at the Mentawai Islands Regional Hospital. To optimize the implementation of SPM, it is necessary to increase the availability of resources, strengthen management commitment, provide continuous training programs for staff, have good monitoring and evaluation systems, as well as patient and family involvement.

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