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Analysis of Factors Contributing to Low Bed Occupancy Rate in Inpatient Wards

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ABSTRACT

Introduction: The Bed Occupancy Rate (BOR) is an important indicator in assessing the efficiency of hospital bed utilization. A low BOR can reflect poor service quality and impact hospital revenue.
Objective: This study aims to analyze the factors causing the low BOR in inpatient wards of Sejiran Setason Regional General Hospital in 2025 based on the 5M management approach (Man, Material, Method, Machine, and Money).
Method: This study used a qualitative design with a phenomenological approach. The research informants consisted of primary, supporting, and key informants selected purposively. Data collection techniques included in-depth interviews, observation, documentation, and focus group discussions (FGDs). Data analysis employed the Miles and Huberman technique, which encompassed data reduction, data presentation, and conclusion drawing.
Result: The results indicate that the low BOR is caused by a shortage of healthcare workers, limited facilities and infrastructure, suboptimal service flow, underutilization of information systems, and budget constraints. Furthermore, external factors such as transportation access, socioeconomic conditions, and community preferences also contribute.
Conclusion: The study concluded that the low BOR is influenced by a combination of internal and external factors. It is recommended that hospitals conduct a comprehensive evaluation of their service management systems, improve resources and facilities, and strengthen public education and promotion strategies to increase patient trust and visits.

Keywords: Bed Occupancy Rate, Causal Factors, Inpatient Rooms

Introduction

Hospital is a healthcare facility that provides comprehensive and individualized healthcare services, including inpatient, outpatient, and emergency care (Law No. 44 of 2009). Hospitals are an integral part of healthcare delivery and services, providing comprehensive healthcare services, both curative and preventive, to the community, with services reaching families and the community. Hospitals also serve as training centers for medical, occupational, and biosocial research (Ardhani, 2021).

Inpatient care is provided to hospitalized patients who occupy a bed for observation, diagnosis, treatment, medical rehabilitation, and other healthcare services (Rahmadani et al., 2022). One healthcare service indicator that can be used to determine the quality, facility utilization, and efficiency of healthcare services is the Bed Occupancy Rate (BOR) (Agus, 2022).

The Bed Occupancy Rate (BOR) is an indicator that describes the level of bed occupancy in a hospital. It is calculated by measuring the number of beds in use at a given time, thus providing an overview of bed occupancy in the hospital over a specific period. Each hospital's BOR can fluctuate and decrease, and this figure is directly proportional to the hospital's bed utilization (Muhith, Saputra, & Nursalam, 2013).

The World Health Organization (WHO) standard bed occupancy ratio is one bed per 1,000 residents. According to the WHO, Indonesia has sufficient hospital beds. This ratio is insufficient when distributed among provinces in Indonesia, as some provinces still have fewer than one bed (Ministry of Health, 2018).

Hospital service utilization, quality, and efficiency can be considered efficient if the BOR indicator value meets the value determined by Barber Johnson, which is 75%-85% (Agus, 2022). Meanwhile, the ideal BOR indicator set by the Ministry of Health is 60-85% (Sudirman et al., 2024).

Data from the Central Statistics Agency (BPS) shows that 26.27% of the Indonesian population had health complaints in 2023. This figure has decreased by 6.09% over the past five years. Five provinces had the highest complaint rates, above 30%: West Nusa Tenggara, Gorontalo, the Riau Islands, East Nusa Tenggara, and Central Java. Statistics show that not many residents were hospitalized in the past year (2023). The highest BOR percentage was in Gorontalo Province at 5.12%, and the lowest in Papua Province at 1.37%. The national average for inpatient care was 3.29%. The national hospital BOR remains safe, below the WHO standard of 5% (BPS, 2023).

Hospital bed utilization in the Bangka Belitung Islands Province was 29.1% in 2021, 34% in 2022, and 15.8% in 2023. These data indicate that the bed occupancy rate (BOR) is not yet optimal and has not yet reached the ideal BOR of 60-85% (Bangka Belitung Islands Provincial Health Office, 2021-2023).

Based on documentation, data on inpatient visits for the last three years and BOR data for the last three years (2022, 2023, and 2024) at Sejiran Setason Regional Hospital are as follows: The number of inpatient visits from January to December 2022 was 6,314. The number of inpatient visits from January to December 2023 was 6.049. The number of inpatient visits from January to December 2024 was 6.512.

Sejiran Setason Regional Hospital's Bed Occupancy Rate (BOR) data for the past three years: 41% in 2022, 49.4% in 2023, and 66.1% in 2024. According to the Barber-Johnson ideal value (75-85%), although this indicator has increased over the past three years, it remains below the ideal value. A lower BOR means fewer beds (TT) are being used to treat patients

compared to the available TT. This means that a low patient population can result in lower financial revenue for the hospital.

Internal and external factors influence bed occupancy (BOR). However, the most significant factor affecting BOR is internal factors, which include input factors and service process factors, while external factors are patient conditions. Input factors that influence bed occupancy (BOR) include public facilities, health facilities, health support facilities, rates, service availability, medical personnel, and medical services. Service process factors that influence bed occupancy (BOR) include the doctor's attitude in providing services, the nurse's attitude in providing services, and service communication.

Low BOR in hospitals can have an impact on decreasing hospital economic income. Low BOR can be interpreted as low public health services so that an appropriate analysis method is needed to determine the factors causing low BOR in hospitals. Based on BOR data at Sejiran Setason Regional Hospital over the past 3 years which has experienced a significant increase but is still low or below the value set by Barber-Johnson, namely <75-85% which is influenced by many factors causing low BOR at Sejiran Setason Regional Hospital in 2022-2024.

Objective

This study aims to analyze the factors causing the low BOR in inpatient wards of Sejiran Setason Regional General Hospital in 2025 based on the 5M management approach (Man, Material, Method, Machine, and Money).

Method

This study uses a qualitative design with a phenomenological approach. Research informants consist of primary informants, supporting informants, and key informants selected purposively. Data collection techniques include in-depth interviews, observation, documentation, and focus group discussions (FGD). The study began on May 10 June 31, 2025 in the Inpatient Room of Sejiran Setason Regional Hospital. The location of the study is at street Kadur Dalam Mentok, West Bangka Regency, Bangka Belitung Islands. Data analysis used the Miles and Huberman technique, which includes data reduction, data presentation, and conclusion drawing.

Result

The results of focus group discussions (FGDs) conducted at Sejiran Setason Regional Hospital revealed several factors contributing to the inefficient utilization of hospital beds. These factors were identified from both internal and external aspects, which included human resources, material, methods, machines, and financial capacity.

From the human resource perspective, the low Bed Occupancy Rate (BOR) was influenced by the limited number of staff, the resignation of several healthcare workers, and inadequate attitudes and communication among personnel. In addition, the relatively high workload further exacerbated the problem, leading to suboptimal service delivery.

In terms of material aspects, the hospital still faced limitations in facilities and infrastructure. Several essential supplies and medical equipment were frequently unavailable or out of stock, thereby disrupting the continuity of patient care.

Regarding methodological aspects, the findings indicated that coordination between community health centers and the hospital was still lacking. The considerable distance between primary healthcare facilities and the hospital also posed a challenge, which in turn affected the flow of patient referrals and hospital utilization.

From the technological or machine aspect, the hospital often experienced computer and network disruptions, resulting in delays in administrative and medical processes. Moreover, the number of medical devices available in the inpatient wards remained insufficient to meet the needs of healthcare services.

Finally, financial constraints emerged as a fundamental issue, as the hospital's construction and development budget was still inadequate. This financial limitation hampered the procurement of infrastructure, the improvement of facilities, and the overall quality of hospital services, thereby contributing to the persistently low BOR.

Discussion

The findings from the focus group discussions at Sejiran Setason Regional Hospital indicated that the low utilization of hospital beds was influenced by multiple internal and external factors, which encompassed human resources, materials, methods, machines, and financial capacity. These elements collectively shaped the efficiency and effectiveness of inpatient services.

In terms of human resources, the study revealed that the number of staff was insufficient to meet service demands. Several employees had resigned, and those who remained often faced challenges related to workload distribution. Limited communication skills and attitudes among healthcare workers further reduced the quality of interaction with patients, thereby diminishing trust and satisfaction.

The material aspect also played a significant role, as facilities and infrastructure in the hospital were found to be inadequate. Several basic supplies and essential equipment were frequently unavailable, which disrupted the continuity of care. Such shortages not only hindered service delivery but also affected the hospital's ability to maintain patient confidence.

From a methodological perspective, the lack of coordination between community health centers and the hospital emerged as a crucial issue. The considerable distance between primary healthcare services and the hospital further weakened the referral system, resulting in delays and reduced hospital bed occupancy.

Technological factors also contributed to the problem, as frequent computer and network failures interfered with hospital operations. These disruptions delayed administrative processes and medical services, while the limited number of medical devices in the inpatient wards restricted the hospital's ability to provide comprehensive care.

Finally, financial limitations were identified as a fundamental challenge. The hospital's construction and development budget was still insufficient to support necessary improvements in facilities and resources. This constraint hindered efforts to optimize service quality and infrastructure, thereby perpetuating the low level of bed occupancy.

Conclusion

Based on the results of research regarding the Factor Analysis of the Lowest BOR in Inpatient Rooms at the Setason District Hospital which uses the Metode Fishbone Diagram, it can be concluded as follows: Man (Human) namely human resources are still lacking, Staff resign from the Hospital, attitude and communication need to be improved Beban labor is quite high. Mathematics (Materials), namely inadequate facilities and infrastructure, a lack of BHP and medication in the inpatient room. Method (Metode) namely lack of coordination between health centers and hospitals, the distance between hospitals and health centers is too far. Mechine (Mesin) namely computer or network sering down and error and the lack of

Alkes in the inpatient room. Money (Finance), namely the hospital construction budget, is still insufficient.

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