

Analysis of the Current Ratio of Drug Stock Inventory in Pharmaceutical Management in the Context of Pharmacoeconomics at the Pharmacy

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(Received March 1, 2025 Revised April 21, 2025 Accepted May 1, 2025, Available online May 1, 2025)

Abstract

This study analyzes the current ratio of drug stock inventory in pharmaceutical management at Apotek Gembleb Farma, Trenggalek Regency, conducted in August 2024. The research aims to evaluate the pharmacy's short-term financial liquidity and explore opportunities for improving asset utilization within the framework of pharmacoeconomics. Data were collected from the pharmacy's financial records, focusing on current assets and current liabilities. The findings reveal that the total current assets amount to Rp 45,000,000, while the current liabilities are Rp 12,000,000, resulting in a current ratio of 3.75. This indicates that the pharmacy has Rp 3.75 in current assets for every Rp 1 of short-term liabilities, reflecting a strong liquidity position. While this ratio exceeds the standard benchmark of 2.0, it also raises concerns about potential overstocking of drug inventory and underutilization of financial resources

Keywords: Current Ratio; Drug Stock Inventory; Pharmacoeconomics

1. Introduction

Pharmaceutical services in pharmacies have a crucial role in supporting the health care system (WHO, 2020). Pharmacies as pharmaceutical service facilities that provide direct access to patients have the responsibility of providing medicines as needed (Smith, M. 2022). Optimizing drug stock management is a major concern because it affects the smooth running of services, operational efficiency, and patient satisfaction (Puspitasari, I.M., 2019). One of the main indicators used in assessing the ability of pharmacies to manage drug stocks is the Current Ratio, which describes the ability of current assets to meet short-term liabilities (MOH, 2021).

In the context of pharmaceutical services, drug inventory management is not only related to stock availability, but also involves planning, procurement, storage, and distribution of drugs (BPOM, 2018). Imbalances in drug stock management can lead to various problems such as stock-outs, overstock, and drug expiry (APA, 2021). Stock-outs have the potential to hamper patient access to needed medicines, while overstocks risk increasing operational costs and losses due to unused drugs (Allen L.V. 2020). This requires pharmacy managers to have good drug stock management in order to remain in a healthy financial condition (Goodman, L.S., 2017).

In the context of pharmacy finance, financial ratios are an important measuring tool for assessing financial performance, one of which is the Current Ratio (katzung, B.G., 2021). Current Ratio is the ratio between current assets and current liabilities, which indicates the ability of an entity to pay off its short-term obligations (Chisholm-Burns, M.A., 2022). In the pharmacy sector, drug inventory is the main component of current assets (Kaplan, W., 2019). Therefore, Current Ratio analysis in drug stock management can provide an overview of the efficiency and effectiveness of financial management and drug availability in pharmacies (Smith, R.D., 2020). Pharmacies that have a good Current Ratio tend to be more financially stable and able to maintain the continuity of drug stocks needed by patients (Tanjung, F., 2019).

In Indonesia, the number of pharmacies is growing rapidly along with the increasing needs of the community for health services (BPOM, 2020). According to data from the Ministry of Health, the number of pharmacies in Indonesia continues to increase every year (TRPS, 2018). However, this increase in the number of pharmacies is not always accompanied by good drug stock management (NICE, 2021). Many pharmacies experience difficulties in maintaining a balance between stock availability and financial health (McConnell, T., 2020). This problem becomes

more complex when considering that pharmacies must compete with other pharmacies and other health care facilities such as clinics or drug stores (Brown, M., 2021).

This study focuses on analyzing the Current Ratio in relation to drug stock inventory as one of the main components of current assets in pharmaceutical services in pharmacies (Kumar, S., 2018). This research was motivated by several factors (Yusof, N.A., 2019). First, the sustainability of pharmaceutical services in pharmacies is highly dependent on sound financial management, one of which is reflected in the Current Ratio (Manginol, S., 2022). When the Current Ratio shows a low number, it means that the pharmacy has difficulty in paying off short-term obligations, which can have implications for drug stock vacancies or problems in procuring medicines (Huang, J., 2021). Conversely, a Current Ratio that is too high can also indicate sub-optimal asset management, such as excessive drug inventory that causes working capital freezing (Saini, B., 2020).

Good drug stock management will affect the quality of pharmaceutical services (FDA, 2019). Poorly managed drug supplies can pose a risk to patients, such as delays in getting the therapy needed (Dipiro, J.T., 2020). This condition contradicts the basic principles of pharmaceutical services which aim to provide drugs in a timely manner, in the right amount, and in the right quality (Alomari, M., 2019). A financial analysis approach is needed to ensure that pharmacies have the ability to maintain a balance of drug stocks and financial health (Hilman, A., 2019).

Current Ratio analysis in drug stock inventory has not been widely researched in depth in the context of pharmacies (MHRA, 2021). Most previous studies have focused more on aspects of supply chain management or drug procurement efficiency in hospitals (Hadi, S., 2018). Pharmacies as primary health care providers have an important role in ensuring the availability of medicines at the community level (Gilbert, D.N., 2019). By understanding the relationship between Current Ratio and drug stock inventory management, pharmacy managers can formulate more effective strategies to optimize current assets and meet patient needs (Walsh, D., 2022).

The research considers the economic challenges that pharmacies face, particularly in an era of intensified market competition (Huang, M.Y., 2021). Pharmacies not only function as a place for drug distribution, but must also be able to manage finances wisely in order to continue operating sustainably (WHO, 2021). Current Ratio analysis can be one of the tools in identifying financial problems, especially those related to inventory management (Fakhrudin, N., 2021). By knowing the level of this ratio, pharmacies can evaluate drug procurement and storage policies to make them more efficient (Anderson, R., 2018).

In a broader scope, this research is expected to contribute to the development of pharmacy management in Indonesia, both on a small and large scale (Rouse, M.J., 2019). The use of Current Ratio as an indicator of financial performance can provide a clear picture for pharmacy managers in making decisions regarding drug stock management (Allen, J.P., 2021). The results of this study are expected to be a reference for policy makers in formulating guidelines or standards for managing drug stocks in pharmacies to ensure continuity of pharmaceutical services (BPOM, 2020).

The research was conducted considering that there are still gaps in financial management and drug stocks in pharmacies (Suyanto, R., 2020). Current Ratio analysis is expected to provide a better understanding of the relationship between financial health and drug stock availability, so as to encourage improvement in the quality of pharmaceutical services in Indonesia (Pham, H., 2022).

2. Methodology

This research will be conducted in August 2024 at Apotek Gembleb Farma, located in Kabupaten Trenggalek. This study aims to evaluate and analyze the current ratio of drug stock inventory as a critical financial indicator in the context of pharmaceutical management, particularly within the scope of pharmacoeconomics. The research will utilize a quantitative descriptive method to assess the financial efficiency and stock management at the pharmacy, specifically focusing on the pharmacy's ability to maintain a balanced inventory that meets both operational needs and cost-effectiveness.



Figure 1. Mind Maps

Data collection will primarily rely on financial records obtained from Apotek Gembleb Farma, which include the incoming and outgoing financial transactions related to drug stock inventory. The incoming data will comprise purchase records of pharmaceutical products, including acquisition costs, quantity, and frequency of restocking. Outgoing financial data will encompass sales records, including revenue generated from dispensing medicines and other pharmaceutical products. By analyzing these financial inputs and outputs, the study will calculate the current ratio, which serves as an indicator of liquidity and the pharmacy's capability to fulfill short-term obligations related to drug stock inventory.

The study will be conducted over a one-month period in August 2024 to ensure the data reflects an up-to-date and specific timeframe that captures the pharmacy's financial performance and inventory management trends. The analysis will focus on identifying the ratio between available drug stock and its corresponding financial value against the pharmacy's liabilities. This will provide insights into whether Apotek Gembleb Farma maintains an optimal inventory level without experiencing overstocking or understocking, both of which can significantly impact financial efficiency and pharmacoeconomic outcomes.

In conducting this research, the collected data will be processed and analyzed using financial analysis tools to calculate the current ratio (current assets divided by current liabilities). The study will evaluate how this ratio correlates with the overall financial health and sustainability of the pharmacy. Furthermore, the research will explore factors influencing stock inventory decisions, such as demand forecasting, supplier relationships, seasonal variations in medicine usage, and the financial capacity of the pharmacy. These factors will provide a comprehensive understanding of the relationship between inventory management and pharmacoeconomics, emphasizing the importance of maintaining a sustainable and cost-effective drug supply chain.

The results of this study are expected to contribute to better pharmaceutical management practices at Apotek Gembleb Farma and serve as a reference for other pharmacies in managing their drug stock inventory efficiently. By identifying areas for improvement and proposing strategic recommendations, the study aims to enhance the economic performance of the pharmacy while ensuring continuous availability of medicines to meet patient needs. This research also highlights the broader implications of efficient inventory management in supporting pharmacoeconomic goals, such as minimizing waste, reducing unnecessary costs, and optimizing healthcare resource allocation.

3. Results and Discussion

The analysis of the current ratio of drug stock inventory in pharmaceutical management at Apotek Gembleb Farma, Kabupaten Trenggalek, reveals critical insights into the financial stability and efficiency of the pharmacy's operations. The current ratio is a fundamental financial metric used to assess the pharmacy's ability to meet its short-term obligations using its available current assets. The data collected in August 2024 highlights that the total current assets of Apotek Gembleb Farma amount to Rp 45,000,000, which primarily includes drug stock inventory, cash on hand, and accounts receivable. Meanwhile, the current liabilities are recorded at Rp 12,000,000, comprising debts, accounts payable to suppliers, and other short-term obligations.

To determine the current ratio, the following formula applied:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (1)$$

Substituting the available values:

$$\text{Current Ratio} = \frac{45,000,000}{12,000,000} = 3.75 \quad (2)$$

This result indicates that the current ratio of Apotek Gembleb Farma stands at 3.75, meaning that for every Rp 1 of short-term liabilities, the pharmacy has Rp 3.75 in current assets to cover these obligations.

The calculated current ratio of 3.75 is significantly above the generally accepted benchmark of 2.0 in pharmaceutical and retail sectors. This reflects that Apotek Gembleb Farma has a strong short-term liquidity position and is well-equipped to fulfill its financial obligations without any immediate risk of insolvency. A ratio above 2.0 is often perceived as favorable, as it indicates a comfortable buffer between the available assets and liabilities. However, while a high current ratio is positive from a liquidity perspective, it also raises questions about the optimal utilization of assets. A ratio of 3.75 may suggest that the pharmacy is holding excess drug inventory or cash reserves that could potentially be invested in other areas to generate higher returns. Excessive stockpiling of drugs could lead to risks such as product expiration, inventory obsolescence, or increased holding costs, which may impact overall profitability.

Table 1. Current Ratio Analysis

Factor	Impact on Apotek Gembleb Farma	Recommendation
Current Ratio (3.75)	Strong short-term liquidity, above the benchmark of 2.0	Ensure efficient asset utilization
High Liquidity	Reduces insolvency risk	Balance liquidity with profitability
Excess Inventory	Risk of expiration, obsolescence, and increased holding costs	Optimize stock management
Idle Cash Reserves	Potential missed investment opportunities	Consider low-risk investments
Accounts Receivable	Can indicate inefficiencies in credit management	Implement better credit policies
Supplier Payment Terms	Longer payment periods can optimize working capital	Negotiate favorable credit terms

Further examination of the financial data reveals that a significant portion of the current assets is tied up in drug stock inventory. While maintaining an adequate stock level is essential to ensure the availability of medicines for patients, inefficient inventory management can result in cash flow stagnation. Therefore, it is recommended that Apotek Gembleb Farma regularly reviews its inventory turnover ratio to identify opportunities for improving stock management efficiency.

Maintaining a well-balanced current ratio is crucial. If the ratio is excessively high, it may indicate underutilization of financial resources. Strategies such as optimizing procurement processes, implementing demand forecasting tools, and improving inventory control systems can help ensure a more efficient use of current assets. Analyzing historical sales data can help determine the optimal level of stock that should be maintained to balance liquidity with profitability. Additionally, adopting automated inventory tracking systems can minimize human errors and improve real-time stock monitoring.

A deeper investigation into Apotek Gembleb Farma's financial structure also reveals that a considerable portion of its current assets is held in cash and cash equivalents. While having a sufficient cash reserve is essential for covering unexpected expenses or economic downturns, excessive idle cash could indicate missed investment opportunities. The pharmacy could explore allocating some of these funds into low-risk investments or expanding its operational capacity to enhance revenue streams.

Another key aspect to consider is accounts receivable. If a significant portion of current assets consists of outstanding receivables, it could suggest inefficiencies in credit management. Lengthy collection periods may cause liquidity constraints despite a strong current ratio. Implementing stricter credit policies, offering early payment incentives, and conducting regular assessments of customers' creditworthiness can improve cash flow and reduce financial risks.

Table 2. Strategies for Optimizing Current Assets

Strategy	Description	Expected Benefit
Inventory Turnover Review	Regularly assess stock levels and adjust based on demand	Prevent stockpiling and reduce holding costs
Demand Forecasting Tools	Use predictive analytics to estimate inventory needs	Minimize excess inventory and cash flow issues

Investment Planning	Allocate idle cash into profitable investments	Improve financial returns
Automated Inventory Control	Implement technology to track stock levels in real-time	Reduce human errors and optimize stock usage
Credit Management Policies	Strengthen collection processes and offer incentives for early payments	Enhance cash flow and reduce outstanding debts
Supplier Negotiation	Extend payment terms to better manage cash flow	Improve liquidity without affecting operations

Furthermore, the impact of supplier payment terms should not be overlooked. If Apotek Gembleb Farma has negotiated favorable credit terms with suppliers, it may have an opportunity to optimize its working capital by extending payment periods strategically. This approach can enhance cash flow without negatively affecting relationships with suppliers.

While ensuring liquidity remains a priority, striking a balance between liquidity and profitability is equally crucial. Holding excessive inventory and cash reserves without proper utilization strategies may lead to financial inefficiencies. Therefore, adopting an integrated financial strategy that includes investment planning, inventory optimization, and credit management is vital for sustaining long-term growth.

Apotek Gembleb Farma should also consider conducting periodic financial health assessments to evaluate the efficiency of its asset utilization. Benchmarking against industry peers and analyzing financial trends over time can provide valuable insights into areas that require improvement. By continuously monitoring financial metrics, the pharmacy can identify potential risks early and take proactive measures to maintain optimal operational efficiency. Current ratio of 3.75 reflects a robust liquidity position, it is essential to assess whether financial resources are being utilized efficiently. By implementing strategic inventory management, optimizing cash allocation, improving credit policies, and leveraging supplier payment terms, Apotek Gembleb Farma can enhance its financial performance and sustain long-term profitability. Striking the right balance between liquidity and operational efficiency will ensure that the pharmacy remains competitive in an ever-evolving pharmaceutical industry.

4. Conclusion and Recommendations

The current ratio of 3.75 at Apotek Gembleb Farma reflects strong financial health and liquidity, there is an opportunity to enhance asset management practices. By analyzing inventory levels, optimizing stock turnover, and strategically allocating excess assets, the pharmacy can further improve its financial efficiency in alignment with pharmacoeconomic principles. This will contribute to achieving better cost management and ensuring sustainable operations in the long term.

Further Study

Future studies and policy initiatives should build upon these findings to ensure that artificial intelligence is utilised ethically and efficiently for the benefit of society.

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