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EFFECTIVENESS OF THE ABC-VEN METHOD AND THE HANLON METHOD IN DRUG AND PHARMACEUTICAL SUPPLY MANAGEMENT: A NARRATIVE REVIEW

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Abstract

This research aims to determine the effectiveness of the ABC-VEN method and the Hanlon Method in managing drugs and pharmaceutical supplies in the health industry and in health facilities such as pharmacies, hospitals, health centers and other health facilities. This study uses a narrative approach from several accredited articles that meet the criteria. A search for this literature study was carried out using Google Scholar with the keywords "drug management using the Hanlon method or ABC-VEN method" and obtained search results of 229 articles related to the Hanlon method and 333 articles related to the ABC-VEN method. Articles were filtered according to the criteria and 5 articles were obtained each. The ABC VEN method and the Hanlon method have been proven to provide effectiveness in drug management in health facilities and have great benefits in drug management and determining problem priorities for improvement strategies in drug management so that they have a positive impact on improving the quality of health services and the health industry.

Keywords: ABC-VEN Method, Hanlon Method, Drug Management, Pharmaceutical Management

Introduction

Drug management is a key component of the healthcare system that significantly influences the effectiveness of medical services, particularly in improving the efficiency and effectiveness of drug procurement. Proper drug management ensures the availability, accessibility, and rational use of medicines in healthcare facilities. Ineffective management may lead to drug shortages, overstocking, increased costs, and decreased quality of healthcare services. Therefore, the implementation of appropriate management methods is essential to optimize pharmaceutical services and support sustainable healthcare delivery [1,2]. Previous studies have also indicated that weaknesses in inventory control systems can contribute to inefficiencies in drug supply and negatively impact service quality [3,4].

Various methods have been developed to improve drug management, including the Hanlon method and the ABC-VEN matrix method. The ABC (Always Better Control) and VEN (Vital, Essential, Non-essential) matrix is a practical and cost-effective approach that emphasizes the importance of efficient inventory management. ABC analysis focuses on ranking drugs based on consumption value or budget allocation, allowing healthcare providers to identify high-cost items that require stricter control. Meanwhile, VEN analysis classifies drugs according to their level of importance in healthcare services, ensuring that critical medicines are prioritized in procurement and distribution [5,6]. The integration of ABC and VEN analysis provides a more comprehensive approach in determining drug priorities compared to single-method approaches [7].

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Several studies have demonstrated that the ABC-VEN method can improve efficiency in pharmaceutical supply management and enhance budget allocation in healthcare facilities. The application of this method enables healthcare providers to optimize drug procurement planning, reduce wastage, and minimize the risk of stockouts [8,9]. In addition, effective drug management supported by systematic classification methods contributes to rational drug use and improved service quality [10]. Poor management practices, on the other hand, may result in inefficiencies, financial losses, and compromised patient care outcomes [11].

On the other hand, the Hanlon method is a data-driven analytical approach used to identify and prioritize critical problems that require immediate attention. This method evaluates problems based on several criteria, including magnitude, urgency, feasibility, and program suitability (PEARL), providing a structured framework for decision-making [12,13]. The Hanlon method is particularly useful in complex healthcare settings where multiple issues must be addressed simultaneously. By prioritizing problems systematically, healthcare managers can develop targeted strategies to improve drug management and service quality [2,14].

Despite the widespread use of both methods, each approach has its own strengths and limitations. The ABC-VEN method is more focused on inventory control and cost efficiency, whereas the Hanlon method emphasizes problem identification and prioritization. Therefore, selecting the appropriate method depends on the specific context and needs of the healthcare facility. Understanding the comparative effectiveness of these methods is crucial for improving pharmaceutical management practices. The combination of both approaches has been suggested as a strategic solution to achieve optimal drug management outcomes [11,15].

This study aims to compare the effectiveness of the ABC-VEN method and the Hanlon method in managing drugs and pharmaceutical supplies based on indexed literature. It explores the strengths and weaknesses of each method and provides recommendations for healthcare practitioners. Through this analysis, it is expected that the most effective approach can be identified to enhance drug management practices and improve the overall quality of healthcare services.

Method

This study was conducted using a qualitative approach with a literature review design based on several previous research articles related to the topic “Effectiveness of Drug Management Using the Hanlon Method or ABC-VEN Method.” Data collection was carried out based on predetermined inclusion criteria, including publications within the last five years (2019–2024). The literature search was performed using Google Scholar, resulting in 229 articles related to ABC-VEN analysis and 333 articles related to the Hanlon method. These articles were then screened according to the inclusion criteria, resulting in six selected articles for each method to be reviewed.

Results

Table 1. Results of Drug Management Studies Using the ABC-VEN and Hanlon Methods

No.	Author	Method	Location	Findings
1	Rofiq et al. (2020)	ABC-VEN	Hospital	Classification of BPJS drugs based on percentage, number of items, and usage using ABC-VEN, improving efficiency and effectiveness of drug management.
2	Kusumawardhana et al. (2024)	ABC-VEN	Pharmacy	Classification of drugs based on urgency and consumption, improving cost allocation efficiency.
3	Indrayanti et al. (2022)	ABC-VEN	Community Health Center	Determination of drug priorities based on budget usage and classification into vital, essential, and non-essential categories, minimizing costs.
4	Muhammed et al. (2020)	ABC-VEN	Hospital	Drug classification based on cost and priority to minimize resource wastage.
5	Ephrem Mfzi et al. (2023)	ABC-VEN	Rwanda Medical Supply	ABC-VEN method is effective and economical in improving pharmaceutical supply efficiency and minimizing drug shortages.
6	Lubis et al. (2024)	Hanlon	Hospital	Identification of priority problems in drug management and detection of planning inconsistencies requiring improvement strategies.
7	Nugroho et al. (2022)	Hanlon	Hospital	Identification of problems related to formulary compliance, delayed payments, and stock data discrepancies.
8	Nugrahaini (2023)	Hanlon	Hospital	Determination of problem priorities and identification of low drug compliance and suboptimal PFT function.
9	Mompewa et al. (2019)	Hanlon	Hospital	Identification of priority issues such as DOEN compliance, budgeting, dead stock, and expired drugs.
10	Aini et al. (2020)	Hanlon	Hospital	Identification of long waiting times and low drug availability.

Based on Table 1, the review of 10 articles indicates that the ABC-VEN and Hanlon methods are widely used in healthcare facilities such as hospitals, pharmacies, and community health centers. The ABC-VEN method is generally applied to classify drugs based on consumption value and level of importance in healthcare services. The findings show that this method improves efficiency in drug management, particularly in cost control and procurement planning. Meanwhile, the Hanlon method is used to identify and prioritize problems in drug management. The problems identified include non-compliance with standards, delays in payments, discrepancies in stock data, and low drug availability. This method assists in determining priority problems that require immediate attention.

Discussion

The ABC-VEN method and the Hanlon method are two commonly used approaches in drug management; however, they differ in their primary focus and application within healthcare facilities. The ABC-VEN method emphasizes efficiency in inventory management and cost control, which is crucial given the high expenditure associated with pharmaceutical procurement. Effective cost management is essential to ensure the sustainability of healthcare services. In contrast, the Hanlon method focuses on problem identification and prioritization for improvement within drug management systems. This method is designed to systematically assess various issues based on their urgency and impact. Therefore, both methods play complementary roles in improving the quality of drug management. The selection of an appropriate method largely depends on the specific needs and conditions of each healthcare facility. Understanding the characteristics of these two methods is essential for effective pharmaceutical management practices.

The ABC-VEN method is a combination of two analytical approaches, namely ABC analysis and VEN analysis, each serving a specific function in drug management. ABC analysis categorizes drugs based on their consumption value or budget allocation, starting from the highest to the lowest. This classification aims to identify drugs that contribute the most to total expenditure so that they can be closely monitored and controlled. Meanwhile, VEN analysis classifies drugs based on their importance in healthcare services into three categories: vital, essential, and non-essential. Vital drugs are critical for saving lives, essential drugs are necessary for basic healthcare services, and non-essential drugs have lower priority. By integrating these two analyses, pharmaceutical managers can determine procurement priorities more effectively. Additionally, this method helps optimize drug distribution and prevent both stock shortages and overstocking. The implementation of ABC-VEN also enhances transparency in budget management. Therefore, this method is widely applied in various healthcare settings.

Research findings indicate that the implementation of the ABC-VEN method has a positive impact on drug management in healthcare facilities. This method has been proven to improve budget efficiency by focusing on high-cost and high-priority drugs. Furthermore, it enhances planning and procurement processes, thereby reducing the risk of stock shortages and excess inventory. A systematic classification of drugs enables more effective monitoring and control of drug usage. This contributes to improved healthcare service quality, as drug availability can be better maintained. These findings are consistent with Rofiq et al. (2020), who reported that the ABC-VEN method improves the effectiveness of drug management in hospitals. Other studies also suggest that this method enhances operational efficiency in pharmaceutical management systems. Consequently, ABC-VEN is considered an effective approach in drug management. Its application supports more accurate decision-making in inventory control and resource allocation.

On the other hand, the Hanlon method is a data-driven approach used to determine priority problems in drug management systematically. This method incorporates several evaluation criteria, including the magnitude of the problem, the level of urgency (emergency), the feasibility of intervention (causability), and program feasibility (PEARL). Each of these criteria is assessed to generate a score that helps prioritize problems requiring immediate attention. This structured approach allows decision-makers to identify issues objectively and quantitatively. Additionally, the Hanlon method provides a clear framework for decision-making processes. The use of numerical data enhances the accuracy and reliability of the prioritization results. This method is particularly useful in complex situations where multiple issues must be addressed simultaneously. Therefore, it is widely used in evaluating drug management systems in healthcare facilities. Its strength lies in its ability to produce data-based solutions.

Based on research findings, the Hanlon method is effective in identifying various problems in drug management. Common issues include non-compliance with standards such as the National Formulary (Fornas) and the National Essential Drugs List (DOEN), delays in payments to suppliers, and discrepancies between recorded and actual stock levels. Additional problems include low drug availability and prolonged prescription service times. The Hanlon method ranks these problems according to priority, facilitating the development of targeted improvement strategies. Recommended strategies include improving procurement systems, implementing management information systems, and enhancing human resource capacity. With clearly defined priorities, corrective actions can be carried out more efficiently and effectively. This demonstrates the important role of the Hanlon method in improving drug management quality. Moreover, it helps reduce the risk of errors in decision-making processes. Therefore, the Hanlon method is a valuable tool in pharmaceutical management.

However, each method has its own strengths and limitations that must be considered. The ABC-VEN method excels in cost control and inventory management, making it highly effective for

optimizing budget utilization and ensuring drug availability. Nevertheless, it is less capable of identifying complex systemic problems within drug management. In contrast, the Hanlon method is highly effective in prioritizing problems and formulating appropriate solutions. However, its effectiveness heavily depends on the availability and quality of data used in the analysis. Inaccurate or incomplete data may lead to suboptimal results. Therefore, the selection of a method should be tailored to the specific needs and conditions of the healthcare setting. Relying on a single method may not be sufficient to address all existing issues. Understanding the advantages and limitations of each method is essential for making informed decisions.

Therefore, combining the ABC-VEN and Hanlon methods can provide an optimal approach to drug management in healthcare facilities. The ABC-VEN method can be utilized to improve efficiency in inventory management and cost control, while the Hanlon method can be applied to identify and resolve problems systematically. Integrating these two methods allows pharmaceutical managers to achieve more comprehensive outcomes. This combined approach not only enhances operational efficiency but also improves the overall quality of healthcare services. Furthermore, it supports more accurate and data-driven decision-making processes. The integration of both methods also promotes better coordination among different units involved in drug management. Therefore, the combined use of these methods is highly recommended in pharmaceutical management practices. Ultimately, this approach ensures that drug management is conducted in a more effective, efficient, and sustainable manner.

Conclusion

The Hanlon method and the ABC-VEN method have proven to be effective in drug management within healthcare facilities. The ABC-VEN method primarily focuses on cost efficiency and procurement prioritization, whereas the Hanlon method emphasizes the identification of critical problems. In practice, the selection of an appropriate method should consider the specific context of the healthcare facility as well as the objectives of drug management to be achieved. The combination of these two methods can serve as an optimal strategy to improve overall healthcare service quality.

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