

THE IMPACT OF LOGISTICS MANAGEMENT ON IMPROVING CUSTOMER SERVICES APPLIED RESEARCH AT BABYLON TRAINING HEALTH CENTER

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ABSTRACT

This research aims to study the impact of logistics management on improving the level of services provided to patients at a health center, by identifying the role of logistics activities in ensuring the availability of medicines and medical supplies, improving service delivery speed, and enhancing coordination between different departments within the healthcare institution.

The research adopted a descriptive-analytical approach, utilizing a questionnaire as the primary data collection tool from a sample of patients at the Babylon Training Health Center. Data were analyzed using descriptive statistical methods, in addition to Pearson's correlation coefficient and linear regression analysis to measure the relationship and influence between the research variables.

The study results demonstrated a strong, statistically significant correlation between logistics management and improved patient service. Furthermore, the results showed a significant impact of logistics management on raising the quality of healthcare services.

The study concluded that improving inventory management, ensuring medication availability, utilizing electronic systems, and enhancing interdepartmental coordination are key factors contributing to improved healthcare service quality and increased patient satisfaction. In light of these findings, the study recommends the necessity of developing logistics systems in healthcare institutions, focusing on staff training, and adopting modern technologies to enhance performance efficiency and achieve higher levels of quality and excellence.

Keywords: Logistics management, healthcare quality, patient satisfaction, inventory management, supply chain, healthcare services, logistics performance. The research also recommended adopting integrated digital marketing strategies and enhancing the use of modern technologies and data analysis to support decision-making and reduce levels of strategic uncertainty.

1. INTRODUCTION

In light of the rapid developments witnessed in the contemporary business world, characterized by globalization and intense competition, logistics management has become one of the fundamental elements upon which organizations rely to achieve efficiency and excellence in service delivery. Logistics management is no longer limited to transportation and warehousing operations alone; rather, it has become an integrated system that includes planning, organizing, executing, and controlling the flow of materials and information from their sources to the end beneficiary.

The importance of logistics management lies in its effective role in improving the quality of services provided, by ensuring the smooth flow of resources and reducing operational complexities, in addition to its direct impact on achieving beneficiary satisfaction and enhancing their level of loyalty.

Among the most prominent roles of effective logistics management is improving supply chain performance by achieving coordination and integration among various relevant parties, including suppliers, distributors, and service providers. This contributes to reducing delays, lowering costs, and increasing service delivery reliability, which positively reflects on the speed of responding to beneficiary needs and improving their experience.

In the healthcare sector, the importance of logistics management increases even further due to the sensitivity of the services provided and their direct connection to human health. Effective inventory management and the use of modern tracking systems contribute to ensuring the availability of medicines and medical supplies at the right time, reducing shortages or surpluses, and improving the efficiency of healthcare service delivery.

Logistics management also contributes to enhancing the flexibility of healthcare institutions and their ability to adapt to sudden changes in demand, by adopting effective strategies in inventory and supply management. This, in turn, helps ensure the continuity of service delivery without interruption and enhances patient confidence in the healthcare institution.

Accordingly, it can be said that logistics management represents a critical factor in improving the quality of healthcare services, through its role in organizing operations, reducing errors, and improving performance speed, which ultimately leads to raising patient satisfaction levels and achieving higher efficiency in institutional performance.

2. RESEARCH METHODOLOGY

2.1 First: Research Problem

Logistics management is one of the fundamental factors that directly affects the improvement of services provided to patients, especially in healthcare institutions that depend on the availability of medicines and medical supplies and the speed of service delivery. However, some health centers suffer from problems related to weak logistics operations management, which negatively reflects on the quality of services provided.

The research problem can be clarified through the following points:

1. **Weak logistics vision:** Limited logistics planning leads to a weak ability to manage the supply chain efficiently, affecting the accuracy of needs identification and demand planning, and leading to shortages or excess inventory.
2. **High operational costs:** Poor inventory and supply management contributes to increased costs as a result of waste or inefficient storage, in addition to high transportation and processing costs.
3. **Low level of service provided to patients:** The unavailability of medicines or delayed service delivery leads to a low level of patient satisfaction, negatively affecting the reputation of the healthcare institution.
4. **Weak supply chain efficiency:** Coordination problems between departments of the healthcare institution are reflected in the smoothness of work, leading to slow procedures and delayed service delivery.

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5. **Weak competitiveness:** The inefficiency of logistics operations management leads to a decline in overall performance levels, reducing the ability of the healthcare institution to excel and compete with other institutions.

2.2 Second: Research Importance

The importance of the current research stems from the importance of its variables, as logistics management plays an essential role in improving the level of services provided to patients in healthcare institutions. It represents one of the main pillars in ensuring the provision of medicines and medical supplies at the right time, in the required quantity, and with the efficiency that contributes to raising the level of health performance.

The importance of the research also emerges in that it highlights the relationship between logistics management and improving the quality of healthcare services, as effective management of logistics activities can help healthcare institutions reduce shortages of supplies, improve resource utilization, and accelerate service delivery, positively reflecting on patient satisfaction.

The importance of the research also lies in the possibility of benefiting from its results by health center administrations, by providing them with information that helps them develop their logistics systems, improve storage, supply, and distribution operations, thereby achieving a better level of efficiency and effectiveness in the delivery of healthcare services.

2.3 Third: Research Objectives

The research aims to demonstrate the role played by logistics management in improving the services provided to patients at the Babylon Training Health Center, by identifying the nature of the relationship between logistics activities and healthcare service quality.

The following sub-objectives branch out from this main objective:

1. To identify the concept of logistics management and its importance in healthcare institutions.
2. To demonstrate the impact of the availability of medicines and medical supplies on improving the level of service provided to patients.
3. To clarify the role of inventory and supply management in reducing waiting time and improving service delivery speed.
4. To identify the impact of coordination between departments of the Babylon Training Health Center on raising performance efficiency and improving patient satisfaction.
5. To provide a number of recommendations that can contribute to developing the logistics system at the health center.

2.4 Fourth: Research Hypotheses and Hypothetical Framework

The current research proceeds from a main hypothesis stating that there is a relationship between logistics management and improving the services provided to patients at the Babylon Training Health Center, from which sub-hypotheses branch out reflecting the nature of the relationship between the dimensions of the independent variable and the dependent variable.

2.4.1 Null Hypothesis (H0):

There is no statistically significant relationship between logistics management and improving the services provided to patients at the Babylon Training Health Center.

2.4.2 Alternative Hypothesis (H1):

There is a statistically significant relationship between logistics management and improving the services provided to patients at the Babylon Training Health Center.

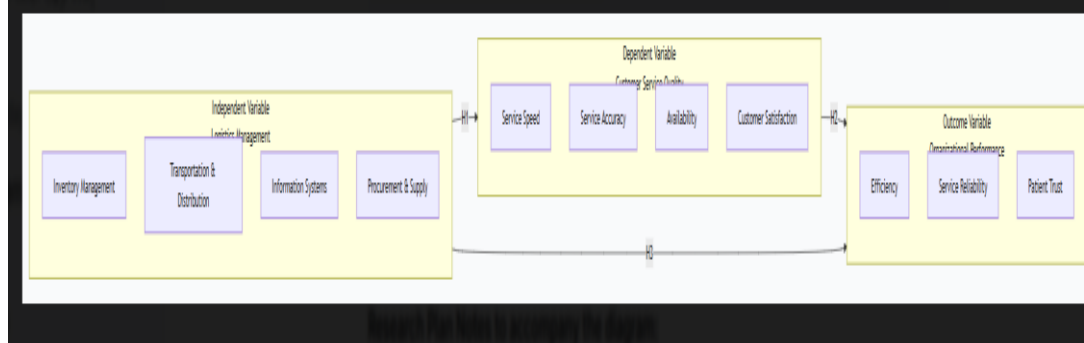


Figure 1: Hypothetical Research framework

2.4.3 Second Alternative Hypothesis (H2):

There is a statistically significant effect of logistics management on improving the services provided to patients at the Babylon Training Health Center.

3. Theoretical Framework of the Research

3.1 First Section: Theoretical Framework of the Independent Variable

3.1.1 First: Concept of Logistics Management

Logistics management is considered one of the modern administrative functions that aims to plan, organize, execute, and control the flow of materials, supplies, and information, from supply sources to the end beneficiary, in a manner that ensures efficiency in performance and service delivery at the right time and place (Marjan, 2015: 38).

Logistics management includes a set of integrated activities, such as purchasing and supply operations, transportation and distribution, warehousing, inventory management, order processing, in addition to managing the information flow associated with these operations (Al-Dabbagh, 2020: 45). These activities work in an interconnected manner to achieve the organization's goals and improve the level of services provided.

Logistics management is also defined as the process through which the movement of materials and supplies is managed with high efficiency, ensuring their availability in appropriate quantities, at the right time, and at the lowest possible cost, while achieving the highest level of beneficiary satisfaction (Al-Bayati, 2017: 52).

In the healthcare sector, logistics management acquires special importance due to its vital role in ensuring the availability of medicines and medical supplies, organizing storage and distribution operations, and reducing operational errors, thereby contributing to improving the quality of healthcare services provided to patients (Al-Samarrai, 2022: 67).

Logistics management is also defined as the comprehensive planning and implementation process of all activities related to the movement and storage of materials and supplies, from the point of origin to the point of consumption, with the aim of providing the product or service in the appropriate quantity, at the right time, in the right place, while achieving the lowest possible cost and increasing the level of beneficiary satisfaction (Mohammadi & Qatr al-Nada, 2022: 13).

3.1.2 Second: Benefits of Effective Logistics Management

Effective logistics management provides many fundamental benefits to organizations, which directly reflect on improving performance levels and quality of services provided (Al-Dabbagh, 2020: 45). The most prominent of these benefits are:

1. **Improving organizational visibility:** Logistics management contributes to providing a comprehensive view of the supply chain, helping in data analysis and making more accurate decisions, and identifying and addressing weaknesses.
2. **Improving service quality:** Logistics management helps provide better services to beneficiaries by ensuring the availability of supplies at the right time, reducing delays, and improving the speed of responding to patient needs, especially in healthcare institutions.
3. **Cost reduction:** Effective logistics management leads to reduced operational costs by improving inventory management, organizing transportation operations, and reducing resource waste.
4. **Increasing revenues:** Logistics management can contribute to increasing revenues by improving the efficiency of operational processes and reducing costs, thereby enhancing the organization's ability to achieve better financial results.
5. **Reducing overhead expenses:** Effective management helps reduce overhead expenses by controlling inventory levels, lowering storage and transportation costs, and improving the use of available resources.
6. **Improving beneficiary experience:** Effective logistics management leads to an improved patient experience by ensuring service delivery at the right time and with high quality, thereby increasing the level of satisfaction and trust in the healthcare institution (Al-Samarrai, 2022: 67).

Overall, effective logistics management is considered one of the fundamental pillars upon which organizations rely to achieve efficiency and excellence, due to the comprehensive view it provides of operations, its role in improving service quality, reducing costs, increasing revenues, as well as enhancing beneficiary experience and raising their level of satisfaction (Al-Dabbagh, 2020: 47).

3.1.3 Third: Responsibilities of the Logistics Manager

The responsibilities of the logistics manager lie in supervising all activities related to the movement of materials and supplies within the organization, from supply and storage operations to distribution and final delivery, ensuring efficiency and effectiveness in performance (Mohammadi & Qatr al-Nada, 2022: 18).

The most important of these responsibilities include:

1. **Supply chain management:** Involves developing and implementing effective strategies for supply chain management, ensuring the smooth flow of materials from suppliers to beneficiaries, reducing costs, and improving service levels.
2. **Inventory management:** Involves monitoring inventory levels and working to achieve a balance between material availability and reducing storage costs, using demand forecasting methods and determining reorder points.
3. **Storage and distribution:** Involves supervising and organizing storage operations within warehouses, in addition to managing distribution centers, ensuring rapid order fulfillment and timely service delivery.
4. **Transportation management:** Involves planning and organizing material and supply transportation operations, selecting appropriate transportation methods, working to reduce costs, and improving delivery efficiency.

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5. **Supplier relationship management:** Involves building effective relationships with suppliers, negotiating with them, ensuring supply continuity, and addressing any problems that may arise in supply operations.

Logistics management includes a set of advanced tasks aimed at achieving operational efficiency and ensuring business continuity, the most prominent of which are:

- **Regulatory and legal compliance:** Adhering to legislation and instructions regulating transportation, storage, and import operations, in addition to adhering to safety and quality standards, especially when dealing with sensitive or hazardous materials (Mohammadi & Qatr al-Nada, 2022: 20).
- **Risk management:** Identifying potential risks in the supply chain and developing alternative plans to deal with emergencies such as delayed supply or supply interruption (Al-Dabbagh, 2020: 50).
- **Cost management:** Analyzing logistics costs and working to reduce them by improving operational processes and renegotiating with suppliers and transportation companies to achieve higher efficiency.
- **Technology utilization:** Relying on modern systems such as Transportation Management Systems (TMS) and Warehouse Management Systems (WMS), which contribute to improving process accuracy and increasing performance efficiency (Al-Bayati, 2017: 60).
- **Logistics human resource management:** Includes training and developing logistics personnel and promoting team spirit, thereby contributing to overall performance improvement.
- **Performance monitoring:** Using Key Performance Indicators (KPIs) to measure the efficiency of logistics operations, monitoring goal achievement, and preparing necessary reports for management.
- **Continuous improvement:** Working on continuously developing logistics processes by identifying improvement opportunities and implementing changes that contribute to reducing costs and increasing beneficiary satisfaction.

Accordingly, the logistics manager plays a pivotal role in ensuring the smooth flow of materials and supplies and achieving a balance between cost reduction and raising operational efficiency levels.

3.1.4 Fourth: Components of Logistics Management

Logistics management consists of a set of main elements that work in an integrated manner to achieve the organization's goals. The most important of these components are (Khatim Allah, 2017: 9):

1. **Transportation:** Transportation is considered one of the most important components of the logistics system, as it involves the movement of materials and supplies from suppliers to the organization and then to beneficiaries. Transportation methods include trucks, airplanes, ships, trains, or a combination thereof, depending on the nature of the materials and transportation conditions.
2. **Warehousing:** Warehousing is a fundamental element in the logistics system, where materials and supplies are kept in designated locations across different stages of the supply chain. This process includes warehouse management, organizing receiving and storage operations, in addition to handling, packaging, and preparation operations (Al-Dabbagh, 2020: 52).

3. **Inventory management:** Inventory management involves monitoring inventory levels and working to achieve a balance between their availability and avoiding excess quantities. This process includes demand forecasting, determining appropriate quantities, and managing reorder operations to ensure the continued availability of materials when needed (Al-Bayati, 2017: 63).
4. **Packaging:** Packaging is an important process aimed at protecting materials during transportation and storage, in addition to its role in facilitating handling and distribution, as well as its importance in marketing aspects (Mohammadi & Qatr al-Nada, 2022: 22).
5. **Supply chain management:** Logistics management is closely linked to supply chain management, as it involves supervising all stages that materials go through, from supply sources to the final beneficiary. This process aims to improve the flow of materials and information and achieve integration among various activities (Khatim Allah, 2017: 12).
6. **Information management:** Logistics management heavily relies on the availability of accurate and timely information, as it involves tracking material movement, managing inventory data, and enhancing communication between suppliers and beneficiaries, thereby contributing to improving decision-making efficiency (Al-Dabbagh, 2020: 54).
7. **Reverse logistics:** Reverse logistics includes processes related to product return, recycling, or disposal, such as recall, repair, or reuse operations. It is an important aspect of improving logistics system efficiency and reducing waste.

3.1.5 Fifth: Types of Logistics Management

Logistics management can be classified into several main types, the most prominent of which are:

- **Internal logistics:** Concerns the movement of materials and supplies within the organization, such as transporting medicines and medical supplies within the health center.
- **Production logistics:** Involves managing the flow of materials during work or service delivery stages, ensuring the smoothness of operations within the organization.
- **External logistics:** Concerns the movement of materials from the organization to beneficiaries, such as distributing medicines or health services to patients.
- **Third-party logistics:** Refers to outsourcing some logistics activities to external parties, such as transportation or warehousing, to improve efficiency and reduce costs.

Logistics supply management is one of the essential activities that contributes to improving the level of services provided, as it includes planning patient services, inventory management, and organizing supply operations, ensuring that patient needs are met and overall performance efficiency is increased (Al-Dabbagh, 2020: 55).

Logistics management also plays a pivotal role in ensuring efficient and effective service delivery by achieving a balance between cost reduction and maintaining a high level of quality, which leads to improved patient satisfaction and enhanced competitiveness of the healthcare institution (Al-Samarrai, 2022: 70).

3.2 Second Section: Improving the Service Provided

3.2.1 First: Concept of Service Improvement

Improving the service provided to patients is considered one of the fundamental goals that healthcare institutions strive for, due to its importance in raising the quality level of services and enhancing beneficiary satisfaction. Service improvement requires following an integrated approach that includes developing internal processes and improving service delivery methods (Al-Ta'i, 2021: 88).

Service improvement is defined as a continuous process aimed at developing performance levels and better meeting patient needs, by improving service quality, speed of delivery, and reducing errors (Al-Samarrai, 2022: 72).

Dimensions of Service Improvement

The most important aspects that contribute to improving the service provided to patients can be clarified as follows:

- **Understanding patient needs:** Service improvement requires accurately identifying patient needs and expectations by collecting and analyzing information, which helps provide a service that matches their requirements (Al-Ta'i, 2021: 90).
- **Service customization:** Means providing health services that suit each patient's needs, using available data and providing flexible options that suit different cases.
- **Effective communication:** Continuous communication with patients contributes to improving service levels by providing necessary information, responding to inquiries, and quickly addressing problems.
- **Employee empowerment:** Training employees and granting them necessary authorities are important factors in improving service quality, as this contributes to quick decision-making and improving overall performance within the healthcare institution.
- **Technology utilization:** Modern technologies contribute to improving the quality of services provided, through the use of electronic systems, artificial intelligence, and digital applications, which helps accelerate procedures, reduce errors, and improve patient experience (Al-Samarrai, 2022: 75).
- **Building a patient service culture:** Service improvement requires enhancing an organizational culture based on patient care, by instilling values of respect and appreciation, and committing to providing high-quality service (Al-Ta'i, 2021: 95).
- **Performance measurement and analysis:** Healthcare institutions rely on performance indicators to evaluate service levels, such as patient satisfaction and response speed, which helps identify strengths and weaknesses and work on improving them (Al-Bayati, 2017: 70).
- **Complaint handling and feedback:** Complaints are an important source for performance improvement, as they help uncover and address problems and turn them into opportunities for service development (Al-Dabbagh, 2020: 60).
- **Enhancing patient loyalty:** Providing distinguished service contributes to building a positive relationship with patients, leading to increased trust and loyalty towards the healthcare institution.

2.2.2 Second: Means of Improving the Service Provided to Patients

Improving the services provided to patients can be achieved through a set of means, the most prominent of which are (Qawadrah & Sharif, 2017: 43):

1. **Training and development:** Training health personnel is one of the most important means of improving service quality, as it contributes to developing employees' skills in dealing with patients, improving communication methods, and raising performance efficiency (Al-Samarrai, 2022: 78).
2. **Infrastructure development:** Improving the infrastructure of healthcare institutions, such as updating medical devices and developing facilities, helps provide a suitable environment for delivering high-quality health services (Al-Ta'i, 2021: 102).

3. **Technology integration:** Using electronic systems, such as electronic medical records and electronic reservation systems, facilitates procedures, reduces waiting time, and improves patient experience (Al-Bayati, 2017: 75).
4. **Patient participation:** Patient participation in evaluating provided services contributes to improving performance quality, by benefiting from their opinions and observations to develop health services (Al-Dabbagh, 2020: 62).
5. **Quality assurance:** Healthcare institutions seek to implement effective systems to ensure the quality of services provided, by adopting comprehensive quality standards, conducting continuous audits, and adhering to best professional practices, thereby contributing to improving the level of healthcare (Al-Samarrai, 2022: 80).
6. **Community awareness:** Awareness plays an important role in improving the level of health services, by enhancing health awareness in the community, encouraging preventive behaviors, and providing support and guidance to patients and their families (Al-Ta'i, 2021: 105).

2.2.3 Third: Strategies for Improving the Service Provided to Patients

Improving health services provided to patients requires adopting multiple strategies aimed at developing performance and achieving beneficiary satisfaction. The most prominent of these strategies are (Qawadrah & Sharif, 2017: 40):

1. **Infrastructure development:** This includes updating healthcare institution facilities and providing a suitable environment for service delivery, by improving medical equipment, maintaining facilities, and paying attention to cleanliness and safety factors (Abdullah, 2020: 55).
2. **Continuous training and development:** Investing in developing employees' skills is one of the most important factors contributing to improving service quality, as continuous training helps raise performance efficiency and enhance communication skills with patients (Al-Hamiri, 2019: 62).
3. **Improving access to service:** This includes expanding the scope of health services to include remote areas, by establishing additional health centers or mobile units, thereby facilitating access to services for all segments of society (Al-Zubaidi, 2021: 74).
4. **Using modern technology:** Adopting electronic systems and health applications helps improve service delivery efficiency, reduce waiting time, and improve the accuracy of health information (Al-Bayati, 2017: 78).
5. **Enhancing communication with patients:** Effective communication with patients helps understand their needs and expectations, which helps improve the level of service provided and build positive relationships with them (Al-Dabbagh, 2020: 65).
6. **Implementing Electronic Health Records (EHR):** Adopting electronic health record systems contributes to improving performance efficiency within healthcare institutions, by facilitating access to medical information, reducing errors, and improving coordination between different departments (Al-Samarrai, 2022: 85).
7. **Enhancing communication:** Effective communication between patients and service providers is a fundamental factor in improving service quality, as various communication channels such as electronic systems and feedback mechanisms contribute to improving patient satisfaction (Al-Ta'i, 2021: 110).

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8. **Patient education:** Educating patients and providing them with necessary health information about their condition and treatment options enhances their participation in health decision-making, which positively reflects on service quality (Abdullah, 2020: 60).
 9. **Implementing quality assurance programs:** Quality assurance programs contribute to monitoring and improving performance, through continuous evaluation of health services, identifying weaknesses, and working to address them (Al-Hamiri, 2019: 68).
 10. **Addressing staff shortages:** Providing qualified health personnel is a fundamental factor in improving service levels, as training and recruitment programs help fill the shortage and improve performance quality (Al-Zubaidi, 2021: 80).
 11. **Enhancing ethical practices:** Adhering to professional ethics, such as maintaining information confidentiality and respecting patients, builds trust and enhances the quality of the relationship between the patient and the service provider (Al-Bayati, 2017: 82).
 12. **Community participation:** Community participation contributes to improving health services by involving individuals in service evaluation, contributing to health decision-making, and enhancing awareness programs (Al-Dabbagh, 2020: 70).
 13. **Integrating traditional medicine:** Integrating some traditional medicine practices with modern healthcare, within scientific controls, is a factor that contributes to improving service acceptance by patients and respecting cultural privacy (Abdullah, 2020: 63).
 14. **Government support and funding:** Government support and funding are fundamental factors in developing the health sector, as they contribute to improving infrastructure, providing medical equipment, and supporting health personnel, helping to face challenges and ensure the continuity of providing high-quality services (Al-Zubaidi, 2021: 85).

Through the application of these strategies, healthcare institutions can achieve tangible improvement in the quality of services provided, which positively reflects on the level of patient satisfaction and enhances the efficiency of the health system in general.

4. APPLIED SECTION OF THE RESEARCH

4.1 First Section: Descriptive Statistical Analysis

In this section, the study data were analyzed using descriptive statistical methods, by calculating arithmetic means and standard deviations, to identify the level of sample members' responses to the research variables, which include the independent variable (logistics management) and the dependent variable (improving the service provided to patients).

Study Population

The study population consists of all patients of the Babylon Training Health Center in Babylon Province, as they are the beneficiaries of the health services provided and the most capable of evaluating the level of these services and the extent to which they are affected by the efficiency of logistics management within the health center.

Study Sample

The study sample consisted of a simple random sample of patients from the Babylon Training Health Center in Babylon Province, selected in a way that allows all members of the population the opportunity to participate in the study, in order to obtain realistic data reflecting patients'

opinions about the level of services provided. The sample size reached (40) patients, and the questionnaire was relied upon as the main tool for collecting data from them.

4.1.1 First: Independent Variable (Logistics Management)

Table (1) Arithmetic Means and Standard Deviations of Logistics Management Items

No.	Item	Arithmetic Mean	Standard Deviation	Agreement Level
1	Logistics management contributes to improving service delivery speed	3.88	0.91	Agree
2	Effective inventory management systems are available within the institution	3.75	0.85	Agree
3	Appropriate transportation methods are used to ensure distribution speed	3.80	0.89	Agree
4	There is continuous follow-up of material and supply flow	3.70	0.87	Agree
5	The institution relies on logistics planning to improve performance	3.82	0.90	Agree
Overall Mean		3.79	0.88	Agree

Table prepared by the researchers based on questionnaire data

The results of Table (1) indicate that the overall arithmetic mean for logistics management items reached (3.79), which is higher than the hypothetical mean, indicating a high level of application of logistics management practices at the Babylon Training Health Center.

The standard deviation reached (0.88), indicating convergence in the opinions of the sample members and reflecting a degree of agreement regarding the importance of logistics management in improving performance.

The results show that the highest item was "Logistics management contributes to improving service delivery speed" with a mean of (3.88), indicating the sample members' awareness of the importance of logistics in accelerating service delivery, especially in healthcare institutions.

Overall, it can be concluded that logistics management is applied to a good degree and effectively contributes to improving performance efficiency and the quality of services provided.

4.1.2 Second: Dependent Variable (Improving the Service Provided to Patients)

Table (2)
Arithmetic Means and Standard Deviations of Service Improvement Items

No.	Item	Arithmetic Mean	Standard Deviation	Agreement Level
1	Health service is provided with high quality	3.64	1.06	Agree
2	Patient needs are met appropriately	3.53	1.02	Agree
3	Patients are dealt with high efficiency	3.73	0.96	Agree

Table prepared by the researchers based on questionnaire data

The results of Table (2) indicate that the arithmetic means for service improvement items ranged between (3.53 – 3.73), falling within the "Agree" level, indicating that the quality level of services provided to patients is generally good.

It is also noted that the highest arithmetic mean was for the third item (3.73), indicating that efficient dealing with patients represents one of the most prominent strengths of the institution.

The second item came with the lowest arithmetic mean (3.53), indicating some relative deficiency in meeting all patient needs, which requires further improvement and development.

The standard deviations indicate an acceptable degree of variation in the opinions of the sample members, reflecting the diversity of perspectives regarding the level of services provided.

Based on this, it can be concluded that the level of improving the service provided to patients is good, but it requires further development to enhance performance quality.

4.2 Second Section: Testing the Main Research Hypotheses and the Sub-Hypotheses Arising from Them

In this section, the research hypotheses were tested using appropriate statistical methods, where Pearson's correlation coefficient was used to measure the strength of the relationship between variables, and simple linear regression analysis was used to measure the impact of the independent variable on the dependent variable.

4.2.1 First: Testing the First Main Hypothesis

The first main hypothesis states: "There is a statistically significant correlation between logistics management and improving customer service."

To verify this hypothesis, Pearson's correlation coefficient was used, as shown in Table (3):

Table (3) Correlation Coefficient between Logistics Management and Improving Customer Service

No.	Variable	Correlation Coefficient	Significance Level
1	Logistics Management	0.843	0.01

It is evident from Table (3) that the correlation coefficient value reached (0.843), which is a high positive value, indicating a strong correlation between logistics management and improving customer service.

The significance level (0.01) indicates that this relationship is statistically significant.

Accordingly, the first main hypothesis is accepted, confirming the existence of a significant correlation between the independent variable and the dependent variable.

4.2.2 Second: Testing the Second Main Hypothesis

The second main hypothesis states: "There is a statistically significant effect of logistics management on improving customer service."

To verify this hypothesis, simple linear regression analysis was used, as shown in Table (4):

Table (4) Results of Simple Linear Regression Analysis for the Effect of Logistics Management on Improving Customer Service

Variable	R ²	F	Significance Level	B	T
Logistics Management	0.710	230.300	0.01	0.882	3.010

The results of Table (4) show that the coefficient of determination (R²) reached (0.710), meaning that logistics management explains (71%) of the changes occurring in improving customer service, a high explanatory percentage indicating the strength of the model.

The calculated (F) value reached (230.300) at a significance level of (0.01), indicating the overall significance of the regression model.

The regression coefficient (B) reached (0.882), a positive value, indicating that increased attention to logistics management leads to improvement in the level of customer service.

The calculated (T) value reached (3.010), which is statistically significant, supporting the validity of the effect.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 First: Conclusions

The study reached a set of important conclusions regarding the role of logistics management in improving the quality of services provided to patients, the most prominent of which are:

1. Logistics management is one of the fundamental factors contributing to improving the quality of services provided, by organizing the flow of materials and supplies and ensuring their availability at the right time.
2. The results of statistical analysis showed a good level of application of logistics management practices within the Babylon Training Health Center, reflecting management's interest in improving operational performance.
3. The results showed an acceptable level of improvement in the service provided to patients, with some aspects needing development, especially in response speed and meeting all needs.

4. The hypothesis testing results revealed a strong, statistically significant correlation between logistics management and improving the service provided, confirming the importance of this variable in achieving patient satisfaction.
5. The regression analysis results showed a strong significant effect of logistics management on service improvement, as it explains a large percentage of the changes in the quality level of the service provided.
6. Effective logistics management contributes to reducing operational costs, improving resource utilization efficiency, and enhancing the quality of performance within the Babylon Training Health Center.
7. The use of modern technology and electronic systems is an important factor contributing to the development of logistics performance and improving service quality.

5.2 Second: Recommendations

Based on the findings of the study, a set of recommendations can be made that contribute to improving the level of services provided, the most prominent of which are:

1. The need to enhance the application of logistics management practices within the Babylon Training Health Center, by developing planning, organization, and follow-up systems.
2. Paying attention to improving inventory management and ensuring the continuous availability of medicines and medical supplies, to avoid shortages or delays in service delivery.
3. Developing the infrastructure of the Babylon Training Health Center, including updating medical devices and equipment and improving the work environment.
4. Investing in training and developing health and administrative personnel, thereby contributing to raising performance efficiency and improving the quality of services provided.
5. Enhancing the use of modern technology, such as electronic systems and digital health records, to improve the speed and accuracy of service delivery.
6. Working to improve communication mechanisms with patients and benefiting from their opinions and observations in service development.
7. Conducting periodic evaluation of logistics performance within the institution, to identify weaknesses and work on addressing them continuously.
8. Senior management support for logistics management practices and providing the necessary resources for their effective implementation.
9. Working to reduce waiting time and improve the speed of responding to patient needs, thereby enhancing their satisfaction level.

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