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PROCUREMENT AND SUPPLY CHAIN MANAGEMENT

EFFECT OF BULK PURCHASING PRACTICE ON OPERATIONAL PERFORMANCE OF PRIVATE HOSPITAL PHARMACIES: A CASE OF OASIS HEALTHCARE GROUP, KENYA

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ABSTRACT

Purpose of the Study: The study examined the effect of bulk purchasing practices on the operational performance of private hospital pharmacies in Oasis Healthcare Group Limited.

Problem Statement: Private hospital pharmacies require efficient procurement systems to ensure the timely availability of medicines and other health products while controlling procurement costs and maintaining dependable operations. Despite the adoption of centralized procurement practices within Oasis Healthcare Group Limited, challenges related to procurement costs, timely availability of health products, and operational efficiency may persist.

Methodology: The study adopted a descriptive research design and targeted 104 participants comprising hospital administrators, logistics officers, procurement officers, warehouse staff, and pharmacy personnel from the 12 health facilities within Oasis Healthcare Group Limited. A census sampling technique was employed, and structured questionnaires were used for data collection. Data were analyzed using descriptive statistics, Pearson correlation analysis, and multiple linear regression.

Results of the Study: The findings established a strong, positive, and statistically significant relationship between bulk purchasing practices and operational performance ($r = 0.868$, $p < 0.001$). Multiple linear regression analysis further demonstrated that bulk purchasing was a statistically significant predictor of operational performance ($\beta = 0.271$, $p = 0.002$).

Conclusions: The study concludes that bulk purchasing practices have a statistically significant positive effect on the operational performance of private hospital pharmacies.

Recommendations: The study recommends that Oasis Healthcare Group Limited strengthen its bulk purchasing framework by consolidating demand across its facilities, improving demand forecasting, establishing appropriate purchasing thresholds, and strengthening supplier negotiations.

Keywords: *Bulk purchasing, centralized procurement, operational performance, private hospital pharmacies, Oasis Healthcare Group Limited.*

INTRODUCTION

Access to affordable and continuously available medicines remains an important concern in low- and middle-income countries, where pharmaceutical procurement can be constrained by limited purchasing power and supply-chain inefficiencies. Bulk purchasing, whereby an organization aggregates its requirements and purchases medicines in relatively large quantities, is intended to exploit economies of scale, strengthen bargaining power, and obtain quantity discounts. Evidence from pharmaceutical procurement in seven low- and middle-income countries indicates that pooled procurement arrangements can enable buyers to obtain significantly lower medicine prices, demonstrating the potential financial benefits of aggregating purchasing requirements (Dubois et al., 2021). Similarly, a systematic review by Parmaksiz et al. (2022) identified price reduction, improved availability, and procurement efficiency among the principal potential benefits associated with pooled procurement, while emphasizing that these benefits depend on appropriate implementation and coordination.

The potential contribution of bulk purchasing extends beyond reducing the unit cost of medicines to improving the efficiency and dependability of pharmacy operations. Larger purchase volumes may reduce the frequency of individual purchasing transactions, improve supplier negotiations, and support more predictable replenishment of medicines. For private healthcare organizations operating multiple facilities, aggregating medicine requirements can provide an opportunity to leverage collective demand and improve procurement efficiency. However, purchasing in large quantities also creates operational risks if purchase volumes are not aligned with actual consumption. Excessive purchasing can increase inventory holding requirements, tie up financial resources, and contribute to medicine expiry or obsolescence. Thus, the operational value of bulk purchasing depends on effective demand planning, inventory control, and alignment between procurement quantities and medicine consumption.

These considerations are particularly relevant in private healthcare facilities in Kenya, where effective inventory management is necessary to maintain medicine availability while controlling operating costs. Karamshetty et al. (2022), in a study of private healthcare facilities in Nairobi County, found a mismatch between the availability of essential medicines and the quantities of other medicines held by facilities, with some products being understocked while others were held in excessive quantities. The authors associated these challenges with resource limitations, managerial factors, and weaknesses in inventory-control systems. Their findings demonstrate that purchasing decisions in private healthcare settings need to be closely linked to inventory management and actual demand. This is particularly important when considering

bulk purchasing because the financial advantage of quantity discounts may be undermined if larger purchases result in excess inventory or product obsolescence.

Oasis Healthcare Group Limited operates multiple healthcare facilities in Kenya and therefore provides a relevant organizational setting for examining the operational implications of bulk purchasing. The Group's procurement and pharmacy functions are expected to support cost-effective acquisition of medical supplies, timely delivery, prevention of stock-outs and overstocking, and maintenance of appropriate inventory levels. The multi-facility structure creates an opportunity to aggregate medicine requirements and obtain potential economies of scale through bulk purchasing. However, the extent to which such purchasing practices translate into improved operational outcomes within private hospital pharmacies requires empirical assessment rather than being assumed from evidence obtained from national or public-sector pooled procurement arrangements.

Although previous research has established potential relationships between aggregated pharmaceutical purchasing, medicine prices, availability, and procurement efficiency, comparatively limited empirical evidence addresses the effect of bulk purchasing specifically on operational performance in private hospital pharmacies in Kenya. Existing Kenyan evidence has mainly examined medicine availability and inventory-management challenges rather than directly establishing the contribution of bulk purchasing to pharmacy operational outcomes. This study therefore examines the effect of bulk purchasing practices on the operational performance of private hospital pharmacies within Oasis Healthcare Group Limited, with operational performance considered in terms of cost, speed, and dependability. Establishing this relationship provides empirical evidence that can inform purchasing-volume decisions and procurement practices within multi-facility private healthcare organizations.

STATEMENT OF THE PROBLEM

The cost, availability and efficient management of essential medicines remain important challenges within healthcare supply chains in Kenya. Evidence from 2018/19 indicated that essential medicines were available in approximately 44% of public health facilities compared with 72.4% of private health facilities, while research among private healthcare facilities in Nairobi County reported mismatches between medicine availability and quantities held, including understocking and excessive inventory levels (Toroitich et al., 2022; Karamshetty et al., 2022). Bulk purchasing, which involves aggregating medicine requirements and procuring larger quantities, can exploit economies of scale, strengthen purchasing power and improve

procurement efficiency and cost management (Seidman & Atun, 2017; Chen et al., 2020; Parmaksiz et al., 2022). However, purchasing quantities that are not aligned with demand and consumption patterns may increase inventory holding requirements, expiry risks and shortages requiring emergency orders. Thus, the operational value of bulk purchasing depends on the extent to which procurement quantities are appropriately aligned with organizational requirements.

Within Oasis Healthcare Group Limited, bulk purchasing is implemented as part of centralized procurement arrangements to consolidate medicine requirements across its facilities. However, its contribution to operational performance within the Group had not been empirically established. In particular, there was limited organization-specific evidence on whether bulk purchasing was associated with improved cost efficiency, speed and dependability of pharmacy operations. Existing literature largely reflects public-sector, national or broader healthcare procurement contexts and therefore cannot automatically be assumed to represent the experience of a private hospital pharmacy network such as Oasis Healthcare Group Limited. This created an empirical gap regarding the relationship between bulk purchasing practice and operational performance within the Group. The study therefore examined the effect of bulk purchasing practice on the operational performance of Oasis Healthcare Group hospital pharmacies to generate organization-specific evidence for informing purchasing-volume decisions and procurement practices.

RESEARCH OBJECTIVES

The study was guided by the following objective:

To determine the effect of bulk purchasing practice on the operational performance of Oasis Healthcare Group hospital pharmacies.

RESEARCH HYPOTHSES/QUESTIONS

H_{01}: Bulk purchasing practice has no statistically significant effect on the operational performance of Oasis Healthcare Group hospital pharmacies.

H_{11}: Bulk purchasing practice has a statistically significant effect on the operational performance of Oasis Healthcare Group hospital pharmacies**.**

THEORETICAL REVIEW/FRAMEWORK

This study was anchored on Transaction Cost Economics (TCE) theory, which originated from Coase (1937) and was subsequently developed by Williamson (1975, 1985). The theory explains organizational decisions in terms of minimizing the transaction costs associated with planning, negotiating, coordinating, monitoring and executing exchanges. In the context of pharmaceutical procurement, centralized bulk purchasing can reduce transaction costs by aggregating requirements and reducing the number of separate purchasing transactions, supplier negotiations, purchase orders and administrative processes. Purchase consolidation therefore enhances purchasing efficiency by allowing the organization to coordinate larger procurement volumes through fewer transactions and potentially obtain more favorable purchasing terms.

TCE also provides a theoretical explanation for shipment consolidation. When purchases from suppliers are consolidated into fewer and larger shipments, the organization can reduce the frequency of delivery transactions and associated costs of ordering, receiving, transportation coordination, inspection and documentation. Shipment consolidation therefore reduces the administrative and coordination costs associated with repeated deliveries while improving the efficiency of receiving and distribution processes. From a TCE perspective, the benefit arises from reducing the number of logistical exchanges that must be planned, coordinated and monitored between the organization and its suppliers.

Inventory consolidation can similarly be explained through the transaction-cost-minimization mechanism. Consolidating inventory requirements across facilities allows the organization to coordinate stock management through centralized planning and control rather than maintaining separate procurement and inventory arrangements for each facility. This can reduce duplicated ordering, inventory monitoring, record-keeping and coordination activities. However, inventory consolidation also requires effective coordination to ensure that aggregated stock levels remain consistent with actual consumption requirements. Thus, TCE explains inventory consolidation as a mechanism through which organizations seek to reduce duplicated transaction and coordination activities while improving the efficiency of resource management.

Accordingly, TCE provides a coherent theoretical explanation for all three dimensions of bulk purchasing practice i.e. purchase consolidation, shipment consolidation and inventory consolidation. Purchase consolidation reduces the number of procurement transactions; shipment consolidation reduces the frequency and coordination costs associated with deliveries; and inventory consolidation reduces duplicated inventory-management and

coordination activities across facilities. These mechanisms are expected to contribute to operational performance through improved cost efficiency, faster procurement and distribution processes, and greater dependability of pharmaceutical supply operations. On this basis, a complementary operations or supply-chain theory is not essential for the present study because the three dimensions can be logically situated within the transaction-cost-minimization mechanism of TCE.

EMPIRICAL REVIEW

Bulk purchasing and pooled procurement aggregate demand to increase purchasing leverage and reduce duplication in procurement transactions. Empirical evidence from seven low- and middle-income countries showed that centralized public-sector procurement was associated with lower medicine prices, although the magnitude of price reduction was smaller where supplier-side concentration was higher (Dubois et al., 2021). Similarly, a systematic review of pooled procurement of medicines and vaccines identified potential benefits in price reduction, availability, and procurement efficiency, while emphasizing that outcomes depend on implementation arrangements and contextual factors (Parmaksiz et al., 2022). These findings suggest that aggregation of purchasing requirements may generate economies of scale, but the benefits realized depend partly on governance and market conditions.

Evidence from centralized drug procurement in Shenzhen, China, further demonstrated that centralized procurement was associated with changes in drug utilization and expenditure patterns (Chen et al., 2020). Similarly, a systematic review of supply-chain and procurement interventions in low- and middle-income countries found evidence that centralized procurement and tendering can generate direct cost savings, although the effects varied across interventions and settings (Seidman & Atun, 2017). WHO guidance on pooled procurement also recognizes increased purchasing power and procurement efficiency as potential benefits of combining purchasing resources, while emphasizing governance, financing, regulatory alignment, and coordination as important implementation conditions (World Health Organization, 2021a). Collectively, these findings provide evidence that procurement aggregation can influence purchasing costs and efficiency, although outcomes are context-dependent.

Purchase consolidation also has an organizational dimension. Purchasing and supply-chain management literature identifies consolidation as a mechanism for combining purchasing requirements and leveraging larger order volumes (Monczka et al., 2020). In hospital settings,

purchasing alliances and group purchasing organizations provide mechanisms through which hospitals aggregate purchases and seek procurement efficiencies and cost control (Burns & Briggs, 2020). However, evidence from large public-sector procurement systems and hospital purchasing alliances cannot automatically be generalized to multi-facility private hospital networks in Kenya because differences in organizational structure, purchasing arrangements, market conditions, and regulatory environments may influence outcomes.

The operational consequences of bulk purchasing also depend on inventory-management conditions. In Nairobi County, Karamshetty et al. (2022) found that private healthcare facilities experienced both insufficient stocks of essential medicines and excessive quantities of other medicines. The study associated these inventory challenges with resource constraints, managerial issues, and weaknesses in inventory-control systems. This finding is relevant to bulk purchasing because larger purchase quantities may generate procurement efficiencies but may also create inventory-management challenges when quantities are not adequately aligned with consumption patterns, storage capacity, and replenishment requirements.

Bulk purchasing must therefore be coordinated with demand planning, stock monitoring, and supplier management. Larger orders may reduce procurement frequency and transaction requirements, but they may also increase exposure to holding costs, expiry, and obsolescence when demand is uncertain. The quality dimension is also important in pharmaceutical procurement. WHO guidance requires procurement systems to apply clear quality-assurance criteria when selecting and engaging suppliers of essential medicines and other health products (World Health Organization, 2021b). Consequently, procurement efficiency should be considered together with inventory control, medicine quality, and supply reliability.

Taken together, the literature provides empirical and conceptual support for a relationship between bulk purchasing and operational outcomes through mechanisms such as economies of scale, reduced procurement frequency, and improved purchasing coordination. Nevertheless, important contextual gaps remain. Much of the empirical evidence concerns national public-sector procurement systems, pooled procurement arrangements, or hospital purchasing alliances outside Kenya, while Kenyan evidence on private healthcare facilities has focused more on inventory-management challenges than on the effect of bulk purchasing practices on operational performance. The present study addresses this gap by examining bulk purchasing practice and operational performance within Oasis Healthcare Group Limited.

Within this study, bulk purchasing was operationalized through purchase consolidation, shipment consolidation, and inventory consolidation. These dimensions represent related but distinct mechanisms: combining purchase requirements, coordinating deliveries, and managing stock across facilities. Their inclusion extends the assessment of bulk purchasing beyond price considerations to its potential implications for the cost, speed, and dependability dimensions of operational performance.

Overall, prior evidence provides a basis for examining the relationship between bulk purchasing and operational performance, but it does not establish the magnitude or direction of this relationship in Oasis Healthcare Group hospital pharmacies. The present study therefore tested this relationship empirically within a private, multi-facility healthcare setting in Kenya.

Table 1: Summary of Empirical and Review

Author and Year	**Country/Context**	**Study Topic**	**Method/Study Design**	**Key Findings**	**Research Gap Identified**	**How the Current Study Addresses the Gap**
Dubois et al. (2021)	Seven low- and middle-income countries	Pooled procurement of drugs and medicine prices	Empirical analysis using drug sales quantities and expenditure data covering 40 important molecules over three years	Centralized public-sector procurement was associated with lower drug prices, although the price reduction was smaller where the	The study focused on public-sector procurement across countries and did not examine operational performance in Kenyan	The current study examines bulk purchasing and operational performance within a private multi-facility

Author and Year	Country/Context	Study Topic	Method/Study Design	Key Findings	Research Gap Identified	How the Current Study Addresses the Gap
				supply side was more concentrated.	private hospital pharmacies.	hospital network in Kenya.
Parmaksiz et al. (2022)	Global/international systematic review	Pooled procurement of medicines and vaccines	Systematic review	Pooled procurement was associated with potential benefits in price reduction, availability and procurement efficiency, although outcomes depended on implementation arrangements and	The review synthesized diverse pooled-procurement arrangements and did not test organization-level operational performance in Kenyan private hospitals.	The current study provides organization-level evidence on bulk purchasing and operational performance within Oasis Healthcare Group hospital pharmacies.

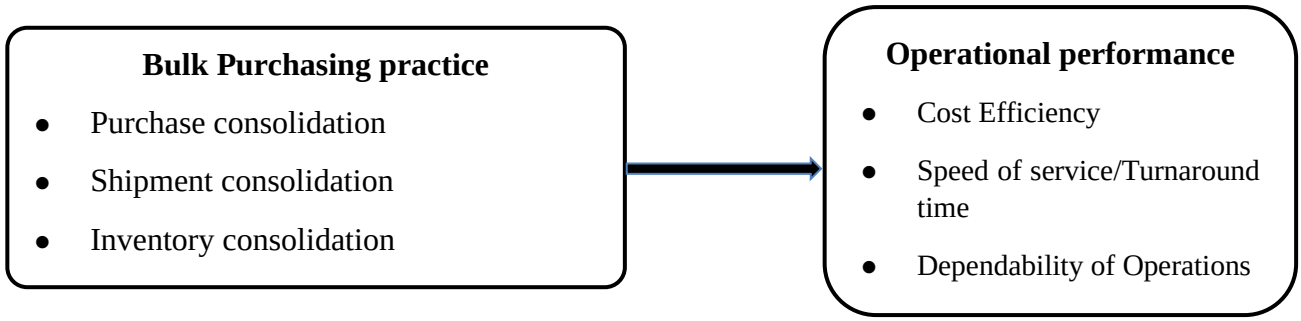
Author and Year	Country/Context	Study Topic	Method/Study Design	Key Findings	Research Gap Identified	How the Current Study Addresses the Gap
				contextual conditions.		
Chen et al. (2020)	Shenzhen, China	National centralized drug procurement	Empirical analysis of drug purchasing-order data from Shenzhen	The National Centralized Drug Procurement policy was associated with changes in drug utilization and expenditure patterns for medicines included in the programme.	The study examined a government-led centralized procurement policy rather than bulk purchasing within a private multi-facility hospital network.	The current study examines bulk purchasing within a private Kenyan healthcare group and its relationship with operational performance.
Karamshetty et al. (2022)	Nairobi County, Kenya	Inventory management in private	Exploratory qualitative study	Private healthcare facilities experience	The study focused on inventory-	The current study directly

Author and Year	Country/Context	Study Topic	Method/Study Design	Key Findings	Research Gap Identified	How the Current Study Addresses the Gap
		healthcare facilities	using semi-structured interviews with managers	d both insufficient stocks of essential medicines and excessive quantities of other medicines. Resource limitations, managerial issues and market mechanisms were identified as important contributing factors.	management challenges rather than the relationship between bulk purchasing and operational performance.	examines bulk purchasing practice and operational performance in private hospital pharmacies.
Burns & Briggs (2020)	United States hospitals	Hospital purchasing alliances/group purchasing	Comparative study of alliance utilization, services	Hospital purchasing alliances remained an	The study concerned U.S. hospital purchasin	The current study extends the

Author and Year	Country/Context	Study Topic	Method/Study Design	Key Findings	Research Gap Identified	How the Current Study Addresses the Gap
		organizations	and performance in 2004 and 2014	important mechanism for hospital supply procurement and were associated with efforts to control costs and provide procurement-related services.	g alliances and did not examine bulk purchasing within a Kenyan private hospital network.	investigation to bulk purchasing and operational performance within Oasis Healthcare Group in Kenya.
Seidman & Atun (2017)	Low- and middle-income countries	Supply-chain and procurement interventions	Systematic review	Procurement and supply-chain interventions showed potential to generate cost savings and improve product	The review covered heterogeneous health-system interventions and did not isolate the relationship between	The current study tests the relationship between bulk purchasing practice and operational

Author and Year	Country/Context	Study Topic	Method/Study Design	Key Findings	Research Gap Identified	How the Current Study Addresses the Gap
				availability, although the strength of evidence varied across interventions and settings.	bulk purchasing and operational performance in private hospital pharmacies.	performance in a specific private healthcare setting in Kenya.

CONCEPTUAL FRAMEWORK



Independent Variable **Dependent variable**

Figure 1. Conceptual framework

Source: Author 2026

RESEARCH METHODOLOGY

The study employed a descriptive survey research design to examine the effect of bulk purchasing practice on the operational performance of private hospital pharmacies at Oasis Healthcare Group Limited. The design was appropriate because it enabled the researcher to collect quantitative data on existing bulk purchasing practices and operational performance without manipulating the study variables. The study was conducted at Oasis Healthcare Group Limited, a private healthcare network in Kenya comprising multi-specialty hospitals, Doctors Plaza facilities and Family Care Centres distributed across several counties, with a concentration in Western Kenya and Nairobi. The organization provided an appropriate setting for the study because its facilities require continuous procurement and distribution of pharmaceutical products, making bulk purchasing an important procurement practice for supporting pharmacy operations.

The study targeted personnel involved in pharmaceutical procurement and pharmacy-related operational activities within Oasis Healthcare Group. These included pharmacy personnel, procurement officers, hospital administrators, warehouse personnel and logistics officers drawn from multi-specialty hospitals, Doctors Plaza facilities and Family Care Centres. A census sampling technique was employed because the target population was relatively small and manageable, and all eligible personnel were therefore targeted for participation. The unit of analysis was the private hospital pharmacy, while individual pharmacy, procurement, administrative, warehouse and logistics personnel constituted the units of observation. The main study population was 104 eligible personnel distributed across the three categories of facilities; the total target population was 116 personnel. A pilot test involving 12 personnel from facilities in Nairobi County was conducted before the main data collection, representing approximately 10.34% (12/116*100%) of the original target population. The pilot participants were excluded from the final study.

Primary data were collected using a structured questionnaire developed to measure bulk purchasing practice and operational performance. The questionnaire consisted of demographic items and measures of the two study constructs. Bulk purchasing practice was operationalized through items relating to purchase consolidation, shipment consolidation and inventory consolidation, while operational performance was measured in terms of cost efficiency, speed and dependability. The items were rated on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The questionnaire was reviewed by the research supervisor

and experts to assess the clarity, relevance and adequacy of the items in representing the study constructs. Content validity was assessed using the Content Validity Index, with both bulk purchasing practice and operational performance obtaining an I-CVI of 0.93. Reliability was assessed using Cronbach's alpha, with bulk purchasing practice and operational performance recording an overall Cronbach's alpha of 0.767; exceeding the commonly accepted threshold of 0.70, indicating acceptable internal consistency of the measurement items. However, because both bulk purchasing practice and operational performance were measured using self-reported responses from the same respondents through a single questionnaire, the study may have been subject to common-method bias, which was not specifically assessed using a statistical test.

Data collection commenced after obtaining the necessary ethical approval from the Kabarak University Research and Ethics Committee and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). Questionnaires were distributed to the targeted respondents electronically through email. Respondents were provided with information concerning the purpose of the study and instructions for completing the questionnaire. A reminder was sent three days after the initial distribution, after which completed questionnaires were collected, checked for completeness and assigned identification numbers before analysis. The collected data were coded, entered and analyzed using Statistical Package for the Social Sciences (SPSS) Version 27. Descriptive statistics, including frequencies, percentages, means and standard deviations, were used to summarize the data. Pearson's correlation analysis was used to determine the direction and strength of the bivariate relationship between bulk purchasing practice and operational performance. Multiple linear regression analysis was subsequently employed to determine the unique contribution of bulk purchasing practice to operational performance while controlling for the other predictors included in the multivariable model. The multiple linear regression model was specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where Y represents operational performance, X_1 represents bulk purchasing practice, X_2 represents supplier consolidation practice, X_3 represents centralized tendering practice, β_0 represents the regression constant, β_1–β_3 represent the regression coefficients for the respective predictors, and ε represents the error term. Statistical significance was assessed at the 5% level ($p < 0.05$).

Ethical principles were observed throughout the research process. Participation was voluntary, and informed consent was obtained from respondents before completion of the questionnaires. Participants were informed of the purpose of the study, the nature of their participation and their right to decline participation. Confidentiality and anonymity were maintained by avoiding the collection of personally identifying information and assigning serial numbers to the questionnaires. The collected information was securely stored in password-protected computer files and was used solely for academic research purposes.

RESULTS AND DISCUSSION

The findings indicate that respondents generally agreed that bulk purchasing improves pharmacy operations. The composite mean of 4.283 shows a high level of agreement, with the strongest perceived benefit being lower pharmaceutical unit costs (mean = 4.477). Respondents reported high agreement with statements describing the operational benefits of bulk purchasing practice.

Table 2: Descriptive Statistics of Bulk Purchasing

Statement	1	2	3	4	5	Mean	Std Dev
Bulk purchasing enables our pharmacy to obtain pharmaceuticals at a lower unit cost	3 3.4 %	0 0%	7 8%	20 22.7 %	58 65.9%	4.477	0.909
Bulk Purchasing has improved the availability of essential medicines in our pharmacy.	4 4.5 %	0 0%	3 3.4%	47 53.4 %	34 38.6%	4.219	0.8899
Bulk purchasing has reduced the frequency of emergencies or last-minute orders.	7 8%	0 0%	7 8%	34 38.6 %	40 45.5%	4.1364	1.116
Bulk purchasing has improved inventory planning and stock management efficiency.	4 4.5 %	4 4.5%	0 0%	30 34.1 %	50 56.8%	4.341	1.0271

Overall, bulk purchasing has positively improved the operational performance of our pharmacy	7 8%	4 4.5%	13 14.8%	44 50%	20 22.7%	4.239	0.9346
Composite mean/Std. dev						4.2825	0.9753

Bulk purchasing recorded an overall mean of 4.283 (SD = 0.975) on the five-point Likert scale. The highest-rated item was that bulk purchasing enabled pharmacies to obtain pharmaceuticals at lower unit costs (M = 4.477, SD = 0.909), followed by improved inventory planning and stock management efficiency (M = 4.341, SD = 1.027), improved availability of essential medicines (M = 4.219, SD = 0.890), and reduced emergency or last-minute orders (M = 4.136, SD = 1.116). These descriptive results indicate favorable respondent perceptions of bulk purchasing, particularly regarding procurement costs, inventory planning, medicine availability, and emergency ordering.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Table 3: Pearson Correlation between Bulk Purchasing and Operational Performance

		Bulk Purchasing	Supplier Consolidation	Centralized Tendering Practice	Operational Performance
Bulk Purchasing	Pearson Correlation	1			
	Sig. (2-tailed)				
Supplier Consolidation	Pearson Correlation	.882**	1		
	Sig. (2-tailed)	0.000			
Centralized Tendering Practice	Pearson Correlation	.849**	.962**	1	
	Sig. (2-tailed)	0.000	0.000		
Operational Performance	Pearson Correlation	.868**	.916**	.901**	
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	88	88	88	

Pearson correlation analysis established a strong positive and statistically significant relationship between bulk purchasing practice and operational performance ($r = 0.868$, $p < 0.001$, $n = 88$). This finding indicates that higher levels of bulk purchasing practice were

associated with higher levels of operational performance among the hospital pharmacies. The result provides empirical evidence of a significant association between the two study variables within Oasis Healthcare Group.

Table 4: Regression Model Summary for Bulk Purchasing

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.928	0.861	0.856	0.38418

The regression model shows a strong overall relationship between the procurement practices and operational performance. However, focusing on bulk purchasing, the results support its inclusion as an important contributor to explaining operational performance, alongside the other procurement practices.

Table 5: ANOVA for Bulk-Purchasing Regression

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	76.500	3	25.500	172.772	0.000
Residual	12.398	84	0.148		
Total	88.898	87			

The regression model was statistically significant, $F(3, 84) = 172.772$, $p < 0.001$. This confirms that the set of procurement practices, including bulk purchasing, significantly explains variations in operational performance. The result supports further interpretation of the bulk-purchasing coefficient.

Table 6: Regression Coefficients for Bulk Purchasing

Variable	B	Std. Error	Beta	t	Sig.	95% CI Lower Bound	95% CI Upper Bound
Constant	0.481	0.235	—	2.041	0.044	0.012	0.949
Bulk Purchasing	0.301	0.096	0.271	3.134	0.002	0.110	0.492
Supplier Consolidation	0.355	0.140	0.423	2.536	0.013	0.077	0.634

Centralized Tendering Practice	0.192	0.108	0.265	1.779	0.079	-0.023	0.406

Regression analysis further demonstrated that bulk purchasing practice was a statistically significant positive predictor of operational performance. The unstandardized regression coefficient was B = 0.301, with a standardized coefficient of β = 0.271, t = 3.134, and p = 0.002. Holding other factors in the original multivariable model constant, a one-unit increase in bulk purchasing practice was associated with a 0.301-unit increase in operational performance. Because p = 0.002 was below the 0.05 significance level, the coefficient was statistically significant. Regression equation: Operational Performance (Y) = 0.481 + 0.301(Bulk Purchasing) + 0.355(Supplier Consolidation) + 0.192(Centralized Tendering Practice).

The null hypothesis, H_{01}: Bulk purchasing practice has no statistically significant effect on the operational performance of Oasis Healthcare Group hospital pharmacies, was rejected based on the reported regression coefficient ($p = 0.002 < 0.05$). Overall, the inferential results indicate a statistically significant positive association between bulk purchasing practice and operational performance. Because the study used an observational survey design, the findings should be interpreted as evidence of association and prediction rather than definitive causal proof.

The positive association is consistent with evidence that pooled or centralized procurement can reduce medicine prices and improve procurement efficiency (Dubois et al., 2021; Parmaksiz et al., 2022) and with TCE's expectation that efficient governance can reduce transaction-related costs (Ketokivi & Mahoney, 2020). At the same time, evidence from private healthcare facilities in Nairobi shows that understocking and overstocking can coexist when inventory systems and managerial capacity are weak (Karamshetty et al., 2022). The findings therefore support coordinated bulk purchasing as a potentially useful operational practice, while underscoring the need to align purchase volumes with demand planning, inventory control, and supplier reliability.

CONCLUSIONS

The study established a statistically significant positive relationship between bulk purchasing practice and operational performance among Oasis Healthcare Group hospital pharmacies. Respondents reported strong agreement that bulk purchasing was associated with lower pharmaceutical procurement costs, improved medicine availability, fewer emergency or last-

minute orders, and better inventory planning and stock management. The inferential findings were consistent with these descriptive perceptions and support the operational relevance of coordinated bulk purchasing within the Group.

Based on these findings, the study concludes that well-coordinated bulk purchasing is associated with stronger operational performance in the studied hospital pharmacies. The evidence supports continued attention to systematic demand planning, appropriate order consolidation, and alignment of procurement quantities with inventory capacity and medicine requirements. These measures can help Oasis Healthcare Group pursue potential economies of scale while limiting risks associated with excess inventory, product expiry, and avoidable holding costs.

RECOMMENDATIONS

Based on the study findings and conclusion, the paper recommends the following:

1. Strengthen coordinated bulk purchasing across facilities, using aggregated pharmaceutical requirements, historical consumption, current stock levels, and projected demand to determine appropriate purchase quantities. This would enable Oasis Healthcare Group Limited to capitalize on purchasing volumes while reducing the risk of overstocking and medicine expiry.

2. Institutionalize evidence-based procurement planning for bulk purchases, with procurement quantities and schedules reviewed regularly against actual medicine requirements and inventory levels. This recommendation is supported by the finding that bulk purchasing enhances inventory planning and stock management, and would further improve the cost efficiency and dependability of pharmacy operations.

3. Strengthen monitoring of medicine availability and emergency orders following bulk purchases, using stock-out frequency, emergency orders, and medicine availability as routine performance indicators. This would build on the finding that bulk purchasing improves medicine availability and reduces the need for last-minute orders, thereby supporting continuity of pharmaceutical supply.

4. Establish a regular bulk purchasing performance-review mechanism involving pharmacy, procurement, warehouse, and logistics personnel. The review should assess procurement costs, inventory levels, medicine availability, emergency orders, and expiries and use the findings to adjust subsequent purchasing decisions. This would ensure that the demonstrated operational benefits of bulk purchasing are sustained across the Group's hospital pharmacies.

5. Strengthen staff capacity in demand forecasting and bulk purchasing decisions, through periodic training and practical use of procurement and inventory data. This is necessary to ensure that the benefits associated with bulk purchasing are translated into improved cost efficiency, speed, and dependability while minimizing the operational risks associated with inappropriate purchase quantities.

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