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Original article

Customer Satisfaction in Private Pharmacies in Al-Bayda City: The Role of Pharmaceutical Care Service Quality

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Abstract
This research examines the quality of pharmaceutical care services offered by private pharmacies in Al-Bayda city, focusing on key service quality aspects and their effect on customer satisfaction. Using a descriptive-analytical approach, the study employed a structured questionnaire administered to 200 pharmacy customers. Data analysis involved calculating means and standard deviations, while multiple linear regression (conducted via SPSS) was used to test hypotheses. Results showed that service providers exhibit strong competence in delivering quality care, with an overall mean score of 3.97, suggesting high respondent agreement. Customer satisfaction was moderately high, averaging 3.79. Regression analysis confirmed a significant link between service quality dimensions and satisfaction, with Reliability and Tangibility having the strongest positive influence. The study suggests that improving these specific dimensions could enhance customer satisfaction in Al-Bayda's private pharmacies.
Keywords: Quality of Healthcare Services, Customer Satisfaction, Pharmaceutical Care, Independent Pharmacies, Al-Bayda City

Introduction

The quality of pharmaceutical care services is a fundamental aspect of healthcare systems, playing a crucial role in improving patient outcomes and ensuring customer satisfaction [1]. The responsibilities of pharmacists have evolved beyond medication dispensing to encompass comprehensive patient care, including medication counseling, pharmaceutical education, and promoting the safe and effective use of treatments [2]. This shift highlights the growing importance of pharmaceutical care, particularly in private pharmacies, which serve as primary points of contact for patients seeking healthcare services [3]. Studies have shown that high-quality pharmaceutical services significantly enhance medication adherence, reduce adverse drug events, and improve overall patient health [4].

In Libya, private pharmacies play a crucial role in healthcare delivery, but few studies have assessed their service quality and its effect on customer satisfaction [5]. Research from other regions indicates that service quality dimensions—including tangibility, reliability, responsiveness, assurance, and empathy—significantly affect patient satisfaction and loyalty [6]. However, whether these findings apply to Libya remains unclear. The study assesses the influence of pharmaceutical care service quality—measured across five dimensions—on customer satisfaction in private pharmacies in Al-Bayda, Libya. A quantitative design was used, with multiple linear regression analyzing the correlation between service quality and satisfaction levels.

The significance of this study lies in its contribution to the limited body of research on pharmaceutical service quality in Libya. By providing a scientific framework for evaluating and improving service delivery, this study aims to enhance pharmacist-patient interactions and optimize healthcare outcomes. Additionally, the findings offer practical recommendations for pharmacy owners and policymakers to refine service quality, improve operational performance, and increase customer satisfaction. Given the increasing demand for patient-centered care, understanding the determinants of service quality in private pharmacies can help bridge gaps in healthcare accessibility and effectiveness [7]. Future research should explore longitudinal effects and potential moderating factors, such as socioeconomic status and health literacy, to further refine pharmaceutical care strategies [8]. Focusing on private pharmacies in Al-Bayda, Libya, this investigation assesses the relationship between pharmaceutical care quality (measured through five service dimensions) and customer satisfaction levels.

Methods

Study Design

A descriptive and analytical method was used to evaluate how the quality of pharmaceutical care services influences customer satisfaction in private pharmacies located in Al-Bayda city. The research followed a systematic approach to allow other scholars to replicate the study.

Study Population and Sample

The investigation focused on ten private pharmacies in Al-Bayda city, specifically selecting Al-Agyal, Abdurrahman, Al-Jameel, Al-Bustataa, Al-Diwan, Al-Shoula, Al-Aseel, Al-Hilal Al-Malaki, Collagen, and

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Belgray pharmacies. Data were gathered through structured questionnaires administered to regular customers, with 20 surveys allocated to each pharmacy (N=200). Analytical procedures involved multiple linear regression to quantify the predictive relationship between service quality dimensions and customer satisfaction outcomes.

Study Instrument

A questionnaire was used as a data collection tool to measure the satisfaction of customers visiting private pharmaceutical institutions in Al-Bayda city. The quality of pharmaceutical services was divided into five dimensions: Reliability, Tangibility, Responsiveness, Assurance (or Trust), and Empathy. The questionnaire form included 23 sub-variables related to the main variables, specifically 4 sub-variables for Tangibility, 5 sub-variables for Reliability, 5 sub-variables for Responsiveness, 4 sub-variables for Assurance, and 4 sub-variables for Empathy. These sub-variables illustrate the manifestations of pharmaceutical service quality, as shown in Tables (1-1), which indicate the dimensions of service quality and the variables that translate quality manifestations in the service. The second part of the form included 20 variables to determine customer satisfaction.

Validity and Reliability of the Instrument

The reliability of the instrument was confirmed using Cronbach's Alpha coefficient, and the total value for the scale was 0.85, indicating a high level of reliability. The validity index was also calculated by taking the square root of the reliability coefficient, and the result was 0.95, confirming that the instrument possesses a high degree of validity.

Statistical Processing

After data collection, the data were entered into the computer for processing using SPSS statistical software, version 21. Arithmetic means were used for all variables illustrating the five dimensions of quality (Tangibility, Reliability, Responsiveness, Assurance, Empathy).

Ethical Considerations

The study was conducted in accordance with the ethical principles of scientific research. Oral consent was obtained from all participants after explaining the study objectives and ensuring the confidentiality of their data, which would only be used for research purposes. No personally identifiable information that could reveal participants' identities was collected. No interventional experiments on humans or animals were conducted.

Results

The results for the level of pharmaceutical quality and customer satisfaction showed that all dimensions of service quality obtained high arithmetic means, indicating a good general satisfaction of customers with these services. Table 1 presents the arithmetic means and standard deviations for the five dimensions of pharmaceutical care service quality (Tangibility, Reliability, Responsiveness, Assurance, Empathy), in addition to customer satisfaction. Results of Multiple Linear Regression Analysis Multiple linear regression analysis was used to determine the impact of service quality dimensions on customer satisfaction.

Table 1. Means and Standard Deviations of Service Quality Dimensions and Customer Satisfaction

[1] Agreement Level	[2] Standard Deviation	[3] Arithmetic Mean	[4] Dimension
[5] High	[6] 0.35	[7] 4.085	[8] Tangibility
[9] High	[10] 0.186	[11] 4.046	[12] Empathy
[13] High	[14] 0.400	[15] 4.022	[16] Assurance
[17] High	[18] 0.228	[19] 3.940	[20] Responsiveness
[21] High	[22] 0.1179	[23] 3.796	[24] Reliability

The results from the multiple linear regression analysis revealed a meaningful statistical association between customer satisfaction—treated as the outcome variable—and five core dimensions of service quality: Tangibility, Reliability, Responsiveness, Assurance, and Empathy, which served as the predictors. The regression model itself proved to be highly significant ($F = 49.91$, $p = 0.001$), thereby invalidating the null hypothesis and affirming that these service quality factors collectively have a notable impact on customer satisfaction levels in private pharmacies located in Al-Bayda city. The model's explanatory power was substantial, as reflected by the coefficient of determination ($R^2 = 0.622$), indicating that 62.2% of the variability in customer satisfaction could be attributed to the combined influence of the five service quality dimensions. Among these, Responsiveness initially appeared to have a positive and statistically significant effect ($\beta = 0.131$, $p < 0.05$), implying that each unit increase in responsiveness would lead to a 0.13-unit rise in satisfaction. However, upon closer examination, Responsiveness was found to lack individual

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statistical significance ($p > 0.05$), distinguishing it from the other four dimensions—Tangibility, Reliability, Assurance, and Empathy—which all demonstrated significant individual contributions to customer satisfaction ($p < 0.05$). Furthermore, the model's integrity was supported by multicollinearity diagnostics, with all Variance Inflation Factor (VIF) scores falling below the threshold of 3. This confirms that the independent variables did not exhibit problematic intercorrelations, reinforcing the reliability of the regression findings.

Table 2. Results of Multiple Linear Regression Analysis

Significance Level (p-value)	Variance Inflation Factor (VIF)	Statistical Significance	T-value	Regression Coefficient (B)	Independent Variable
0.029	1.677	0.00001	2.2	0.13	Tangibility
0.000	2.104	Coefficient of Determination R^2: 62%	4.8	0.33	Reliability
0.877	2.27	Calculated F-value: 49.91	2.27	0.00	Responsiveness
0.003	2.044		2.9	0.20	Assurance
0.0000	1.797		3.7	0.19	Empathy

We observed in Figure 1 how the frequency distribution curve closely resembles the normal distribution curve, and we also noted that the points largely align with the diagonal line, which represents the normal distribution curve. The shape of the frequency distribution curve closely resembles the normal distribution curve. It is also noticeable that the data points align closely with the diagonal line, which represents the normal distribution

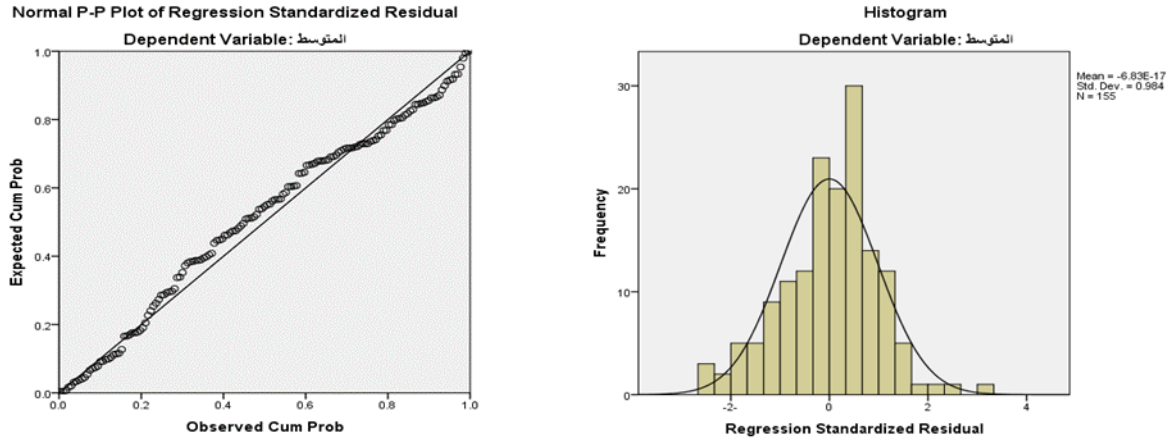

Figure 1. The frequency distribution curve

Discussion

The study results demonstrated that the quality of pharmaceutical care services in private pharmacies in Al-Bayda city was high, which positively influenced customer satisfaction. The findings supported a significant impact of key quality dimensions—Tangibility, Reliability, Assurance, and Empathy—on satisfaction, while Responsiveness did not show a statistically significant effect. This aligns with prior research, such as the study by Sungjin (2005) [9], which emphasized the role of tangibility and empathy in shaping patient perceptions of care. Additionally, Martínez-López-de-Castro et al. (2018) [10] found that personalized pharmacist-patient interactions significantly improved satisfaction in outpatient pharmacy settings, reinforcing the importance of human-centered care.

The results further suggest that customer satisfaction extends beyond mere service delivery; it hinges on perceived safety, trust, and emotional support from healthcare providers. For instance, studies have shown that pharmacist-led counseling and patient education tools, such as visual demonstrations for medication use, enhance patient confidence and adherence, thereby improving satisfaction [11]. These outcomes underscore the need for continuous training programs to strengthen pharmacists' communication and empathy skills, as well as improvements in pharmacy infrastructure, such as private consultation areas, to address tangibility concerns [12].

On a broader scale, the study reinforces the hypothesis that quality-driven pharmaceutical services can elevate overall healthcare standards. National health policies should prioritize service quality in the pharmaceutical sector, given its critical role in patient outcomes. Structured pharmaceutical care programs,

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particularly for chronic conditions like diabetes and hypertension, have demonstrated measurable improvements in both clinical metrics and patient-reported quality of life [10].

For future research, it would be valuable to expand the study's scope to include comparative analyses between public and private sector pharmacies in Libya, as well as investigations into regional disparities in service quality. Additionally, examining the influence of demographic factors—such as age, gender, and socioeconomic status—on customer satisfaction could provide deeper insights for tailored service improvements, as seen in similar studies conducted in Ethiopia [11].

Conclusion

The study found that the quality of pharmaceutical care services in Al-Bayda's private pharmacies has a notable influence on customer satisfaction, especially in areas like Tangibility, Reliability, Assurance, and Empathy. However, the Responsiveness dimension did not show a significant effect. To address this, the study suggests enhancing communication and ensuring that customers receive clear, thorough information about their medications. Overall, the findings highlight the ongoing need to elevate service quality to further improve customer satisfaction.

Conflict of interest. Nil

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