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Original article

The Impact of Pharmaceutical Care Service Quality on Customer Satisfaction in Private Pharmacies in Al-Bayda City

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Abstract
This study aims to measure the level of pharmaceutical care service quality in private pharmacies in Al-Bayda city, analyze the extent of applying quality dimensions are applied within them, in addition to evaluating the impact of these dimensions on customer satisfaction. A descriptive-analytical approach was employed, and a questionnaire was designed and distributed to a sample of 200 beneficiaries of these pharmacies' services. Data were analyzed using means and standard deviations. The study hypotheses were tested through a multiple linear regression model using SPSS software. The results showed that service providers in these pharmacies possess high competence in delivering quality services, with the overall arithmetic mean for service quality reaching 3.97, which reflects a high level of agreement. It also became evident that customer satisfaction reached a moderate level, with an arithmetic mean of 3.79. The regression analysis results indicated a significant effect of service quality dimensions on service. The test revealed that the dimensions of Reliability and Tangibility had a significant and positive impact on customer satisfaction. The study concluded that improving service quality dimensions, particularly Reliability and Tangibility, contributes to raising the level of customer satisfaction in private pharmacies in Al-Bayda city.
Keywords: Service Quality, Customer Satisfaction, Pharmaceutical Care, Private 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 are key healthcare providers, yet there is limited research evaluating the quality of their services and their impact on customer satisfaction [5]. Previous studies in other regions have demonstrated that service quality dimensions—such as tangibility, reliability, responsiveness, assurance, and empathy—directly influence patient satisfaction and loyalty [6]. However, the applicability of these findings to the Libyan context remains underexplored. This study assesses the influence of pharmaceutical care service quality on customer satisfaction in private pharmacies in Al-Bayda city, Libya, using these five key dimensions. A quantitative approach was employed, utilizing multiple linear regression analysis to determine the strength and direction of the relationship between service quality and customer 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]. This study aims to measure the impact of pharmaceutical care service quality, with its five dimensions (Tangibility, Reliability, Responsiveness, Assurance, Empathy), on customer satisfaction in private pharmacies in Al-Bayda city, Libya.

Methods

Study Design

A descriptive-analytical approach was employed to assess the impact of pharmaceutical care service quality on customer satisfaction in private pharmacies in Al-Bayda city. The study was designed to ensure replicability by other researchers through a structured methodology.

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Study Population and Sample

The study focused on private pharmacies in Al-Bayda city, with questionnaires distributed to frequent customers of the selected pharmacies. A total of 200 questionnaires were allocated 20 per pharmacy; namely (Al-Agyal Pharmacy, Abdurrahman Pharmacy, Al-Jameel Pharmacy, Al-Bustataa Pharmacy, Al-Diwan Pharmacy, Al-Shoula Pharmacy, Al-Aseel Pharmacy, Al-Hilal Al-Malaki Pharmacy, Collagen Pharmacy, Belgray Pharmacy). A quantitative approach, supported by multiple linear regression analysis, was used to evaluate the strength and influence of each service quality dimension on customer satisfaction.

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 showed that the model is globally significant in determining the relationship between customer satisfaction and the explanatory variables (Tangibility, Reliability, Responsiveness, Assurance, Empathy). A multiple linear regression model was used, in which the explanatory variables were considered as independent variables and customer satisfaction as the dependent variable. The results showed the regression model's significance through the F-value of (49.91) with a significance level (p-value) of (0.001), which is less than 0.05. This necessitates the rejection of the null hypothesis and the acceptance of the alternative hypothesis. This means that the explanatory variables have a significant impact on the level of pharmaceutical service quality provided in private pharmacies in Al-Bayda city on customer satisfaction.

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The results explain that the explanatory variables account for 62.2% of the variance in customer satisfaction, which is indicated by the coefficient of determination (R^2). Furthermore, the beta value clarifying the relationship between customer satisfaction and the Responsiveness variable was (0.131) and was statistically significant, as can be inferred from the t-value and its associated p-value. This means that for every one-unit improvement in responsiveness, the level of satisfaction improves by (0.13) units, and similarly for the other coefficients. It became clear that the significance level for the means showed rejection for all of (Tangibility, Reliability, Assurance, and Empathy) but acceptance of the null hypothesis for Responsiveness. This means that Responsiveness did not have a significant impact on customer satisfaction. The table also shows the results of the linear regression, where the result revealed that the Variance Inflation Factor (VIF) for the model is less than (3), indicating the absence of a multicollinearity problem among the model variables.

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

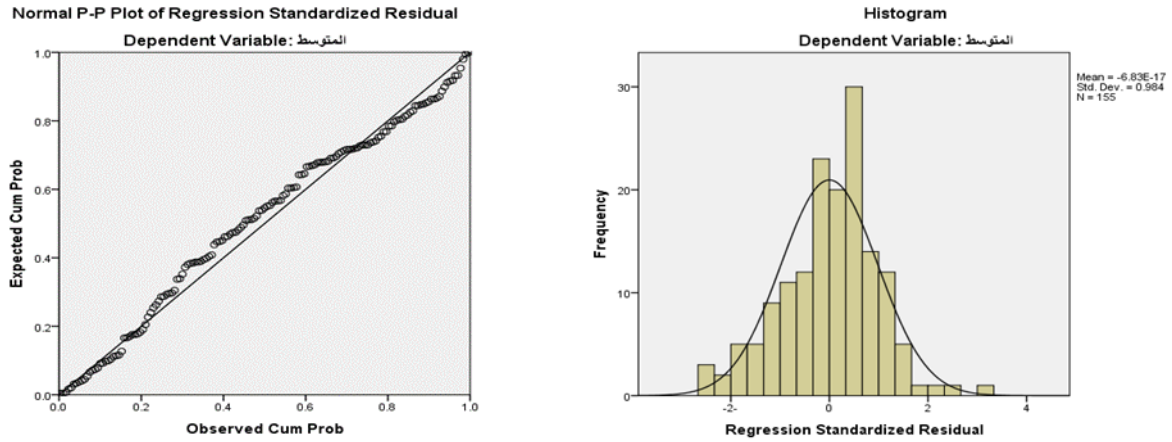

Figure 1. The frequency distribution curve

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

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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, 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 concluded that the quality of pharmaceutical care services in private pharmacies in Al-Bayda city significantly affects the level of customer satisfaction, particularly through dimensions such as Tangibility, Reliability, Assurance, and Empathy. However, no significant impact was observed for the Responsiveness dimension. The study recommends improving the Responsiveness dimension by enhancing effective communication and providing clear and comprehensive information to customers about their medications. The results also emphasize the importance of continuing to improve the quality of pharmaceutical services to raise the level of beneficiary satisfaction.

Conflict of interest. Nil

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