DEVELOPING A QUESTIONNAIRE FOR EVALUATING THE QUALITY OF PHARMACEUTICAL SERVICES AT PHARMACIES IN NAM TU LIEM DISTRICT, HANOI CITY

Dang Vu Ha[1]
Tran Thi Thu Trang[2]

[1, 2]Thanh Do University
Email: *dvha@thanhdouni.edu.vn*[1]; *ttttrang@thanhdouni.edu.vn*[2]

Received: 11/10/2023 Reviewed: 21/3/2024
Revised: 25/3/2024 Accepted: 28/3/2024

DOI: *https://doi.org/10.58902/tcnckhpt.v3i1.93*

Abstract:

The satisfaction of customers with pharmacies is one of the factors used to evaluate the quality of pharmaceutical services. The objective of this study is to establish a set of criteria to assess the quality of pharmacies in the Nam Tu Liem district area through customer satisfaction. A cross-sectional study was conducted with 201 customers. The questionnaire was ensured to be reliable with a Cronbach's Alpha coefficient >0.7 for each assessed factor. After conducting an Exploratory Factor Analysis (EFA), the study identified 5 groups of factors with similar observed variables including employee's attitude and communication skills; professional expertise and advisory skills of employees, facilities and operations of the pharmacy and drug prices, the quality and diversity of medications.

Keywords: *Questionnaire; Quality, services; Pharmacy; Nam Tu Liem district, Hanoi city; Satisfaction.*

1. Introduction

Currently in Vietnam, pharmaceutical businesses and retail systems are expanding rapidly, leading to a significant increase in the number of private pharmacies, contributing significantly to providing healthcare services to the public. In general, the supply of drugs has been ensured to be sufficient, timely, and of competitive quality and prices (World Health Organisation 1998; World Bank 2012).

Due to factors such as convenience and low costs, the majority of the population tends to directly visit pharmacies or drugstores to purchase medications for self-treatment. Only when facing serious health issues do they seek medical facilities. Therefore, pharmacies and drugstores have become the initial point of contact for the population within the healthcare system.

In light of this situation, improving the quality of pharmaceutical services in private pharmacies and drugstores is crucial and necessary to meet the increasing healthcare needs of the public (Smith et al, 2009). Various factors influence the satisfaction with the quality of pharmacy services, such as pharmacy staff, prices, and the reputation of the pharmacy, as well as the infrastructure. Among these, pharmacy staff play a crucial role, as they are considered consultants, supporters, and also business people.

To contribute to improving the quality of services provided by pharmacies and aiming to

chieve the goal of using medications rationally, safely, and effectively, we have decided to conduct this research project: "Developing a questionnaire for evaluating the quality of pharmaceutical services at pharmacies in Nam Tu Liem District, Hanoi"

2. Research overview

Customer satisfaction is a fundamental concept describing the degree of a person's state or feeling derived from comparing the results obtained from consuming products or services with one's expectations (Kamat et al, 1998). To assess the quality of services, evaluating the perceived level of customer satisfaction is always a crucial criterion in the assessment process (Kamat et al, 1998; Watson et al, 2006). Studies related to evaluating the quality of services from the customer's perspective are becoming increasingly popular not only in areas such as banking, telecommunications, tourism, or other business sectors but also in the healthcare sector in recent years in Vietnam. These studies not only assess the current status of service quality in the respective fields but also provide measurement tools that contribute to enhancing and improving service quality (Phuong 2013; Phuong 2009; Tam 2009).

A survey study on customers purchasing over-the-counter (OTC) medications regarding the quality of pharmacies in the Flemish region of Belgium in 2009 revealed that over 75% of patients felt satisfied. Particularly, the level of satisfaction with the quality of pharmacy services increased among customers who received sufficient advice from pharmacists on health issues and the use of prescribed medications (Watson et al, 2006). In the United States in 2010, a survey study aimed to compare the quality of services between two groups of pharmacies: traditional and advanced pharmacies that integrated pharmaceutical care activities. This study evaluated customer satisfaction through two data collection methods: direct interviews and remote interviews through a questionnaire. Statistical findings revealed higher patient satisfaction rates in advanced pharmacies, which integrated pharmaceutical care activities, in contrast to traditional counterparts. Moreover, there was a significant increase in satisfaction within the group of advanced pharmacies that provided comprehensive information and guidance on medication usage for buyers (Nahid et al, 2010).

According to Alessandra R. Mesquita and colleagues in a satisfaction assessment study, it has been shown that various data collection methods are used to gather information for evaluating the relationship between customers and patients. These methods include telephone interviews with both patients and pharmacists, postal survey methods, participant observation, and observational methods where individuals act as customers. Video analysis methods are also utilized (Chalker et al, 2005; Mesquita et al, 2010).

In 2014, author Nguyen Duy Thuc conducted research to identify factors influencing OTC drug supply activities in Hanoi and assess their impact. Using direct customer interviews with a 5-point Likert scale questionnaire, the author identified three factors affecting customer satisfaction with the quality of pharmaceutical services at pharmacies: Pharmacy staff, Facility, Drug prices, and the reputation of the pharmacy, with the pharmacy staff factor having the most significant impact. However, this study was limited to 12 pharmacies in 5 districts in central Hanoi, which may affect its generalizability. The results explained only 37.3% of the variation in customer satisfaction with the quality of pharmaceutical services, indicating that there are still other influencing factors that the author has not identified (Thuc 2014).

In 2013, author Do Xuan Thang conducted a survey study on the supply of over-the-counter drugs in pharmacies in Hanoi using a mixed-method research approach (qualitative research – observation, interviews with pharmacy staff; quantitative research – survey study). The results showed that customer satisfaction with the quality of pharmaceutical services was influenced by factors such as pharmacy design, customer factors, staff attitudes, knowledge and communication skills with coworkers. Additionally, the convenient location of the

pharmacy, pricing, good advice, and the reputation of the pharmacies significantly influenced customer choices and transactions between pharmacy staff and customers at these pharmacies (Do 2013).

3. Research methods

3.1. Study Population, Location, and Timeframe

Objective: Pharmacies meeting GP standards in Nam Tu Liem district, Hanoi. Surveyed customers purchasing medication.

Research period: From November 2022 to June 2023.

3.2. Methods

Phase 1: Literature review: Construct a set of questions to evaluate the quality of pharmaceutical services at pharmacies.

Phase 2: Pilot study: Utilize the questionnaire developed in Phase 1 for experimental interviews, adjusting it to match with real-world conditions in order to optimize data accuracy.

Phase 3: Quantitative research: Conduct a survey using the refined tool from Phase 2 to collect data.

Phase 4: Data processing: Quantitative data collected in Phase 3 will be processed using the SPSS software.

3.3. Sample Size for the Study

In this study, the Exploratory Factor Analysis (EFA) method is employed. Therefore, the minimum sample size must be 4 – 5 times the number of observed variables (Hoang et al, 2008; Nguyen 2007). Thus, the minimum required sample size for this study should be between 92 – 115 participants.

After the screening process, a total of 201 collected surveys from nine pharmacies met the requirements for further processing and analysis.

4. Research result

Table 1. Characteristics of Study Participants

Features	Frequency (people)	Percentage (%)
Sex		
✓ Male	71	35.3
✓ Female	130	64.7
Age range		
✓ Under 30	72	35.8
✓ From 30 to 60	115	57.2
✓ Over 60	14	7.0
Education level		
✓ Not graduated from high school	21	10.4
✓ High school	47	23.4
✓ University or college	125	62.2
✓ Postgraduate	8	4.0

Among a total of 201 research subjects, females account for a significantly higher proportion than males (n = 130; 64.7% compared to n = 71; 35.3%) (Table 1). Specifically, the age group "30–60 years old" has the highest proportion (57.2%), while the age group "Above 60 years old" has the lowest (7.0%). In terms of educational background, the category "University and College" has the highest proportion (n = 125; 62.2%), and the category "Postgraduate" has the lowest proportion (n = 8; 4.0%).

Table 2. The results of the Cronbach's Alpha coefficients for each factor

Factor	Cronbach's Alpha
Attitude and communication skills of the staff	0.639
Professional expertise and consulting abilities of the staff	0.634
Convenience of the pharmacy	0.670
Medication price	0.668
Medication quality and diversity	0.748

The Cronbach's Alpha coefficients for the scale with 5 factors (Employee's attitude and communication skills, Employee's professional expertise and advisory abilities of the staff, Convenience of the pharmacy, Medication price, medication quality and diversity) all have Cronbach's Alpha values between 0.6 and 1.0 (Table 2). This indicates that the measurement scale (set of indices) is well-constructed, and the

reliability of the scale is assured. In other words, this measurement scale can be used to assess the quality of pharmaceutical services at the pharmacy.

Table 3. Rotated Component Matrix

Observable variable	Factor loading				
	1	2	3	4	5
I don't have to wait long when buying medicine	0.624				
Reasonable opening hours	0.545				
Adequate and suitable facilities	0.714				
The location of the pharmacy is convenient for me to travel, easy to find	0.684				
The pharmacy is close to populated area	0.644				
The quality of the pharmacy's medications is ensured		0.798			
All types of medications are available when I need them		0.863			
The quantity of medications is always guaranteed		0.752			
The staff helps me choose appropriate medications			0.715		
Adequate advice on the effects of the purchased medications			0.654		
Complete instructions on how to use the medications			0.663		
Full advice on side effects and how to handle them			0.621		
Medication prices are lower than other pharmacies				0.770	
Stable medication prices				0.783	
The medication prices are clearly stated on the packaging				0.799	
Friendly and enthusiastic staff					0.781
Staff cares about my health					0.675
Staff is polite and respects me					0.597
Communicates with me in an understandable and clear language					0.548
Eigenvalues	3.593	1.906	1.885	1.541	1.295
Variance Explained (%)	18.91	10.03	9.92	8.11	6.82
Total Variance Explained	53.79%				

All 5 extracted factors have Eigenvalues greater than 1, factor loadings for each measurement variable of the factors are greater than 0.4, and the total variance explained is 53.79% > 50% (Table 3). Therefore, the second round of Exploratory Factor Analysis (EFA) is appropriate and reliable. Bartlett's test is statistically significant (Sig. = 0.00 < 0.05); KMO is 0.708, indicating adequate sampling.

5. Discussion

5.1. Participant Characteristics

To obtain data for this study, the collaboration of pharmacy owners within the research areas in Hanoi is required. Only upon their consent can the researchers engage in their data collection activities. Through the survey process, the researchers found that pharmacy owners often have concerns that this study will investigate their activities (as well as the quality of the pharmacies), which may affect their business or causing inconvenience to the pharmacy's customers, making them uncomfortable and potentially leading to loss of customers. Consequently, they refused to participate in the study. Therefore, in future studies, researchers

need to explain in detail the purpose of the study to minimize the incidence of subjects declining participation. In reality, all 201 questionnaires met the requirements, corresponding to 201 participants from nine pharmacies. Women (64.7%) represent the highest gender ratio, and those with a "University or College" degree (62.2%) are the majority, suggesting that female customers with higher education levels are more likely to participate and complete the questionnaires (Do 2013). This study produced outcomes similar to those observed in the research conducted by author To Xuan Hieu, wherein a notable predominance of females (62.6%) and a significant majority of customers with college-level education (42.2%). Despite temporal and geographical disparities, both investigation centered on a clientele primarily composed of educated females. Consequently, it is discernible that this demographic tends to show more interest in health matters compared to others (To 2015).

5.2. Reliability of the measuring tool and factor analysis

The data analysis results indicate that the service quality measurement scale used for quantitative research has achieved satisfactory reliability (Cronbach's Alpha > 0.6). Therefore, the constructed index set is a reliable measurement scale and can be utilized to assess the quality of pharmaceutical services at pharmacies.

Through the EFA process, five factors have been identified from the 19 observed variables that truly measure the quality of pharmacy services, including:

Factor 1: Employee's Attitude and Communication Skills.

Factor 2: Professionalism and Advisory Skills of Employees.

Factor 3: Facilities and Operations of the Pharmacy.

Factor 4: Medication Price.

Factor 5: Medication Quality and Diversity.

These five factors explain a total of 53.79% of the data variation, with each factor explaining: Factor 1 – 18.91%, Factor 2 – 10.03%, Factor 3 – 9.92%, Factor 4 – 8.11%, and Factor 5 – 6.82% (Table 3). It is evident that Factor 1 (Employee's Attitude and Communication Skills) explains the majority of the data variation, indicating its significant influence on customer satisfaction with the quality of pharmacy services. This result may suggest the extent to which each factor influences customer satisfaction with the quality of pharmaceutical services at pharmacies. However, to determine the differential impacts of each factor – be they significant or negligible, positive or negative - further analysis steps such as multivariate regression analysis need to be conducted.

The study by author To Xuan Hieu differed in that the questionnaire comprised six factors, including "Employee attitude and communication skills", "Professional expertise, counseling skills of employees, and pharmacy credibility", "Physical facilities and operations of the pharmacy", "Medication quality and variety", "Medication prices", and "Pharmacy design". However, a commonality between the two studies is that both identified the factor of "Employee attitudes and communication skills" as predominantly accounting for data variance (To 2015).

6. Conclusion

In the total of 201 research subjects from nine pharmacies, females accounted for a significantly higher proportion than males (64.7% versus 35.3%). Among them, the age group "30 – 60 years old" had the highest proportion (57.2%), while the age group "Over 60 years old" had the lowest (7.0%). In terms of educational background, the "University and College" degree had the highest proportion (62.2%), and the "Above University" degree had the lowest (4.0%).

All 20 variables in the 5 factors have correlation values greater than 0.3. All variables have shown that the reliability of the measurement tool is ensured, which allows to conduct more in-depth research in the future. The Cronbach’s Alpha coefficients for the measurement tool with 5 factors (Employee's

Attitude and Communication Skills, Professionalism and Advisory Skills of Employees, Convenience of the Pharmacy, Medication Price, Medication Quality and Diversity) all have values $0.6 \leq N \leq 1.0$, indicating that the constructed measurement tool is good, and the reliability of the measurement tool is ensured. In other words, this measurement tool can be used to evaluate the quality of pharmaceutical services.

In the second round of EFA, the results show that all 5 extracted factors have Eigenvalues greater than 1, factor loadings for each measurement variable of the factors are greater than 0.4, and the total variance explained is 53.79% > 50%. Therefore, the second round of EFA is appropriate and reliable. Bartlett's test is statistically significant (Sig. = 0.00 < 0.05); KMO is 0.708, indicating adequate sampling.

In conclusion, the study has constructed an evaluation index for the quality of pharmaceutical services consisting of 5 indices measured by 19 observed variables. This index has been proven to be reliable and valid, suitable for assessing the quality of pharmaceutical services. Finally, the study identified 5 factors evaluating the quality of pharmaceutical services, corresponding to the 5 constructed measurement indices:

1. Employee's Attitude and Communication Skills
2. Professionalism and Advisory Skills of Employees
3. Facilities and Operations of the Pharmacy
4. Medication Price
5. Medication Quality and Diversity

References

Binh, N. T. (2007). *Dich te Duoc*. Nha xuat ban Y hoc - Ha Noi.

Chalker, J., Ratanawijitrasin, S., Chuc, N. T. K., Petzold, M., & Tomson, G (2005). Effectiveness of a multi-component intervention on dispensing practices at private pharmacies in Vietnam and Thailand—a randomized controlled trial. *Social Science & Medicine, 60*(1), 131-41.

To Xuan Hieu. (2015). *Xay dung bo chi so danh gia chat luong dich vu duoc tai nha thuoc* (Khoa luan tot nghiep Duoc si, Dai hoc Duoc Ha Noi).

Kamat, V. R., & Nichter, M (1998). Pharmacies, self-medication and pharmaceutical marketing in Bombay, India. *Social Science & Medicine, 47*(6), 779-794.

Mesquita, A. R., Lyra Junior, D. P., Brito, G. C., Balisa-Rocha, B. J., Aguiar, P. M., de Almeida Neto, A, C. (2010). Developing communication skills in pharmacy: a systematic review of the use of simulated patient methods. *Patient Education and Counseling, 78*(2), 143-148.

Nahid, K. K., Mojgan, L., Hasantehran, T., & Fatemeh, P. S. (2010). The Effective Factors on Satisfaction from the View Point of Patients at the Emergencywards in Tabriz emam and Sina Hospitals. *Procedia - Social and Behavioral Sciences, 31*, 750-755.

Nguyen Van Phuong. (2013). *Khao sat chat luong dich vu Duoc tai cac nha thuoc dat tieu chuan GPP tren dia ban thanh pho Vinh - Nghe An*. Chuyen khoa cap I - Dai hoc Duoc Ha Noi.

Pham Thanh Phuong. (2009). *Khao sat thuc hoat dong cua cac nha thuoc duoc cong nhan GPP tren dia ban Ha Noi* (Khoa luan tot nghiep duoc si, Dai hoc Duoc Ha Noi).

Smith, F. (2009). The quality of private pharmacy services in low and middle-income countries: a systematic review. *Pharmacy World & Science, 31*, 351-61.

Nguyen Minh Tam. (2009). *Danh gia chat luong dich vu duoc cua mot so nha thuoc dat tieu chuan GPP tai Ha Noi* (Luan van thac si Duoc hoc, Dai hoc Duoc Ha Noi).

Do Xuan Thang. (2013). *An investigation of non-prescription medicine supply in community pharmacies in Hanoi, Vietnam* (PhD thesis, University of Nottingham).

Nguyen Duy Thuc. (2014). *Danh gia cua khach hang ve mot so yeu to anh huong toi hoat dong*

cung ung thuoc khong ke don tai mot so nha thuoc cong dong tren dia ban Ha Noi nam 2014, (Khoa luan tot nghiep Duoc si, Dai hoc Duoc Ha Noi).

Hoang Trong & Chu Nguyen Mong Ngoc. (2008). *Phan tich du lieu nghien cuu voi SPSS Phân tích dữ liệu nghiên cứu với SPSS*. Truong Dai hoc Kinh te Thanh pho Ho Chi Minh - Nha xuat ban Hong Duc.

Watson, M. C., Norris, P., & Granas, A (2006). A systematic review of the use of simulated patients and pharmacy practice research. *International Journal of Pharmacy Practice, 14*(2), 83-93.

World Bank (2012). *Vietnam - Porverty assessment and strategy*.

World Health Organisation (1998). *The Role of the Pharmacist in Self-Care and Self-Medication*.

XÂY DỰNG BỘ CHỈ SỐ ĐÁNH GIÁ VỀ CHẤT LƯỢNG DỊCH VỤ DƯỢC CỦA NHÀ THUỐC TẠI QUẬN NAM TỪ LIÊM, THÀNH PHỐ HÀ NỘI

Đặng Vũ Hà[1]
Trần Thị Thu Trang[2]

[1, 2]Trường Đại học Thành Đô
Email: [1]*dvha@thanhdouni.edu.vn*; [1]*ttttrang@thanhdouni.edu.vn*

Ngày nhận bài: 11/10/2023 Ngày phản biện: 21/3/2024
Ngày tác giả sửa: 25/3/2024 Ngày duyệt đăng: 28/3/2024

DOI: *https://doi.org/10.58902/tcnckhpt.v3i1.93*

Tóm tắt:

Sự hài lòng của khách hàng đối với các nhà thuốc là một trong những yếu tố được sử dụng để đánh giá chất lượng của dịch vụ dược. Mục tiêu của nghiên cứu này là xây dựng một bộ tiêu chí để đánh giá chất lượng của các nhà thuốc trong khu vực quận Nam Từ Liêm thông qua sự hài lòng của khách hàng. Một nghiên cứu cắt ngang đã được tiến hành trên 201 khách hàng. Bảng câu hỏi đã được đảm bảo đáng tin cậy với hệ số Cronbach's Alpha >0.7 cho mỗi yếu tố được đánh giá. Sau khi thực hiện phân tích nhân tố khám phá (EFA), nghiên cứu đã xác định 5 nhóm yếu tố có các biến quan sát tương tự, bao gồm: Thái độ và kỹ năng giao tiếp của nhân viên, chuyên môn của nhân viên, cơ sở vật chất và hoạt động của nhà thuốc, giá thuốc, và chất lượng và đa dạng của các loại thuốc.

Từ khoá: *Bộ câu hỏi; Chất lượng, dịch vụ; Nhà thuốc; Quận Nam Từ Liêm, thành phố Hà Nội; Sự hài lòng.*