

ORIGINAL ARTICLE

Sociodemographic characteristics and user satisfaction at private pharmacies across Northern Lima, Peru

Zuly Chavez-Urbano^{1,a}  

¹ Universidad Nacional Mayor de San Marcos, Lima, Peru.

^a Specialist in Anesthesiology, Analgesia, and Rehabilitation.

Keywords:

pharmacy; community pharmacy services; consumer satisfaction; public health; characteristics (Source: MeSH - NLM).

ABSTRACT

Objective. To determine the sociodemographic characteristics associated with user satisfaction at private pharmacies across Northern Lima, Peru. **Methods.** A quantitative, non-experimental, cross-sectional, and comparative study was conducted. The instrument used was the Pharmacy User Satisfaction Scale, applied to a sample of 150 users from private pharmacies in Northern Lima. To assess the association between sociodemographic characteristics and satisfaction, Kendall's Tau-b test and Fisher's exact test were used. **Results.** Significant associations were found between user satisfaction and sex ($p = 0.034$), as well as socioeconomic status ($p = 0.001$). **Conclusions.** Sex and socioeconomic status are factors associated with user satisfaction at private pharmacies in Northern Lima.

Características sociodemográficas y satisfacción del usuario en farmacias privadas en Lima Norte, Perú

Palabras clave:

farmacia; servicios comunitarios de farmacia; satisfacción de los consumidores; salud pública; características (Fuente: DeCS - BIREME).

RESUMEN

Objetivo. Determinar las características sociodemográficas asociadas a la satisfacción del usuario en farmacias privadas en Lima Norte (Perú). **Métodos.** Se diseñó un estudio cuantitativo, no experimental, con alcance comparativo y transversal. El instrumento utilizado fue la escala de satisfacción del usuario de farmacias, que se aplicó a una muestra de 150 usuarios de farmacias privadas en Lima Norte. Para verificar la asociación de las características sociodemográficas con la variable satisfacción se utilizaron la prueba de Tau-b de Kendall y el test exacto de Fisher. **Resultados.** Existen asociaciones de la satisfacción con el sexo ($p = 0,034$) y el nivel socioeconómico ($p = 0,001$). **Conclusiones.** El sexo y el nivel socioeconómico son factores relacionados a la satisfacción del usuario de farmacias privadas en Lima Norte.

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Correspondence:

 Zuly Chavez-Urbano

 zulymedic@hotmail.com



INTRODUCTION

There is a knowledge gap regarding the relationship between user satisfaction and sociodemographic characteristics among pharmacy users in the national context of Peru ⁽¹⁾. User satisfaction is a crucial indicator of service quality and has a direct impact on loyalty and treatment adherence ⁽²⁾.

At the international level, Piraux et al. ⁽³⁾ reported that low satisfaction may lead to non-adherence to prescribed treatment, which negatively affects public health. In this regard, Yuliandani et al. ⁽⁴⁾ emphasized the importance of assessing factors that influence user satisfaction, including aspects related to customer service, drug availability, waiting times, and the professional competence of pharmacy staff.

In the national context, Condezo and Caldas ⁽⁵⁾ indicated that the sociodemographic characteristics of pharmacy users also play a fundamental role in the perception of satisfaction. Factors such as age, educational level, gender, and socioeconomic status may significantly influence users' expectations and experiences. For example, older individuals may have different expectations of the care received compared with younger users. Zapata ⁽⁶⁾ showed that educational level may affect the understanding and appraisal of the information provided by pharmacists. Therefore, a detailed analysis of these characteristics is essential to identify potential disparities and areas for improvement in service delivery.

Thus, integrating a sociodemographic approach into the evaluation of user satisfaction enables the development of more specific and effective strategies to improve the quality of service in private pharmacies in Northern Lima, Peru. Segmenting users according to their demographic characteristics facilitates the implementation of tailored measures that better respond to the needs and expectations of each group ⁽⁶⁾. Furthermore, this approach may contribute to the continuous training of pharmacy personnel and the optimization of internal processes, thereby ensuring more efficient and higher-quality care.

Based on the evidence presented, the fundamental relevance of exploring the relationship between satisfaction and the sociodemographic characteristics of end users is supported ⁽⁷⁾. Accordingly, the following research objective is proposed: to determine the sociodemographic characteristics associated with user

satisfaction in private pharmacies in Northern Lima, Peru.



METHODS

Study type and area

The research design was non-experimental with a comparative scope ⁽⁸⁾, as it sought to determine significant differences between the study variables. It was also a quantitative, cross-sectional ⁽⁹⁾ inquiry, oriented toward data collection through the self-administration of a closed-ended questionnaire. The study was conducted in the district of San Martín de Porres, Northern Lima (Peru), in 2023.

Population and sample

The sample was non-probabilistic and purposive ⁽¹⁰⁾, consisting of 150 users of private pharmacies in Northern Lima, specifically in the district of San Martín de Porres. Inclusion criteria were completion of informed consent and being of legal age. Exclusion criteria included failure to complete the measurement instrument and simultaneous participation in another research study.

Variables and data collection instruments

For the variable "satisfaction with private pharmacy services," the pharmacy service satisfaction scale validated by Márquez-Peiró and Pérez-Peiró ⁽¹¹⁾ was applied. An Aiken's V ⁽¹²⁾ value of 0.90 was obtained, considered highly satisfactory. The instrument included 21 items measuring pharmacy user satisfaction across four dimensions: dispensing area and process, staff skills, trust and patient support, and explanations and health status assessment (see Table 2).

Responses to the items followed a Likert-type scale, with four options ranging from "strongly disagree" (1 point) to "strongly agree" (4 points). Thus, the instrument ranged from a minimum score of 21 to a maximum of 84 points. Satisfaction with private pharmacy services was categorized as low (21-41 points), moderate (42-62 points), and high (63-84 points).

Regarding the instrument's reliability, a pilot test was conducted, yielding the following Cronbach's alpha values by dimension: dispensing area and process ($\alpha=0.87$), staff skills ($\alpha=0.89$), trust and patient support ($\alpha=0.82$), and explanations and health

status assessment ($\alpha=0.90$). These values ensured an adequate validation and reliability process.

Construct validity was confirmed through an exploratory factor analysis (EFA), preceded by the Kaiser-Meyer-Olkin test of sampling adequacy ($KMO=0.967$) and Bartlett's test of sphericity ($X^2=2929.197$; $df=150$; $p<0.000$). The results supported the application of EFA. Items clustered appropriately into their respective dimensions, showing acceptable communalities and a clear factorial solution, jointly explaining 68.87% of the total variance. Cronbach's alpha coefficients also demonstrated high internal consistency across all dimensions.

In terms of variable definitions, user satisfaction was conceptualized as the degree to which a user's expectations, needs, and desires are fulfilled by a product, service, or experience. Sociodemographic characteristics were collected using a structured data sheet, which inquired about age, sex, socioeconomic status, and educational level.

Data collection procedures

Participation in this study required prior approval by each participant through written informed consent. Participants were clearly and truthfully informed, in an understandable manner, about the risks, benefits, alternatives, and purpose of the study. The instrument was administered through a survey via Google Forms®, with the link sent to participants' WhatsApp accounts. Ethical standards were observed throughout the research process.

Data analysis

Once collected via Google Forms®, data were exported to SPSS version 18. Descriptive statistics were used for sociodemographic characteristics and the variable "satisfaction." Given the ordinal and nominal nature of the variables, cross-tabulations were generated. To verify the association between "sociodemographic characteristics" and "satisfaction," Kendall's tau-b and chi-square tests were applied.

Ethical considerations

This study complied with the ethical principles of the Declaration of Helsinki, as promulgated by the World Medical Association. Accordingly, data collection adhered to the four basic principles of research ethics: respect for persons, beneficence, non-maleficence, and justice. Informed consent guaranteed the participants' free, voluntary, and autonomous decision

to take part in the study. Approval was obtained from the Ethics Committee of the Faculty of Medicine, Universidad Nacional Mayor de San Marcos, under study code 0319-2024.

RESULTS

Regarding age, 38% of private pharmacy users were between 51 and 65 years old. With respect to sex, the proportion of female users was higher (64.7%) compared with male users (35.3%). In terms of socioeconomic status, the majority reported a middle level (54.7%). Likewise, with regard to educational attainment, 43.3% of participants had completed secondary education as their highest level of formal studies (see Table 1).

In the satisfaction variable, within the dimension "dispensing area and process," the highest value was observed in moderate satisfaction for the item "the dispensing area is easily accessible" ($fi = 65$; $\% = 43.3$). In the "staff skills" dimension, the

Table 1. Sociodemographic characteristics of private pharmacy users

Sociodemographic characteristics	n = 150	
	fi	%
Age		
18–30 years	39	26.0
31–50 years	42	28.0
51–65 years	57	38.0
>65 years	12	8.0
Sex		
Male	53	35.3
Female	97	64.7
Socioeconomic level		
Low	64	42.7
Middle	82	54.7
High	3	2.0
Very high	1	0.6
Educational level		
No formal education	2	1.3
Primary	61	40.7
Secondary	65	43.3
Technical	19	12.7
University	3	2.0

Table 2. Descriptive statistics of satisfaction by dimensions and items

Satisfaction items	n = 150					
	High		Moderate		Low	
	fi	%	fi	%	fi	%
Dispensing area and process						
The location of the pharmacy is adequate.	40	26.7	63	42.0	47	31.3
The dispensing area is easily accessible.	38	25.3	65	43.3	47	31.3
The temperature is adequate.	42	28.0	61	40.7	47	31.3
Opening hours are sufficient.	39	26.0	62	41.3	49	32.7
Waiting time is appropriate.	43	28.7	63	42.0	44	29.3
Conditions of confidentiality during dispensing are good.	41	27.3	60	40.0	49	32.7
Staff skills						
The pharmacist is always pleasant with me.	44	29.3	62	41.3	44	29.3
If I have any questions about my medication, the pharmacist is always willing to help me.	40	26.7	64	42.7	46	30.7
The pharmacist dedicates all the time I need.	39	26.0	61	40.7	50	33.3
The pharmacist is willing to answer my questions.	41	27.3	65	43.3	44	29.3
Trust and patient support						
I trust the pharmacist and his/her professionalism.	42	28.0	60	40.0	48	32.0
When I talk to the pharmacist, I feel better.	38	25.3	64	42.7	48	32.0
The pharmacist asks me whether I am obtaining the best results with my medication.	40	26.7	66	44.0	44	29.3
The pharmacist addresses my treatment-related needs.	43	28.7	60	40.0	47	31.3
The pharmacist asks questions to ensure that my medication is effective.	41	27.3	62	41.3	47	31.3
Explanations and assessment of my health status						
The pharmacist tells me how I should take my medication.	39	26.0	65	43.3	46	30.7
The pharmacist explains the action and effects of my medication.	40	26.7	63	42.0	47	31.3
If I have any problem, I can discuss it with the pharmacist.	42	28.0	62	41.3	46	30.7
The pharmacist informs me about the adverse effects of my medication.	41	27.3	64	42.7	45	30.0
I have concluded with the pharmacist that the medication will produce favorable effects.	39	26.0	62	41.3	49	32.7
The pharmacist asks me about changes in my health status since the last visit.	40	26.7	63	42.0	47	31.3

highest value corresponded to moderate satisfaction for the item "the pharmacist is willing to answer my questions" (fi = 65; % = 43.3). In the dimension "trust and patient support," the highest value was found in moderate satisfaction for the item "the pharmacist asks me whether I am obtaining the best results with my medication" (fi = 66; % = 44.0). Finally, in the dimension "explanations and assessment of my health status," the highest value was observed in moderate satisfaction for the item "the pharmacist tells me how I should take my medication" (fi = 65; % = 43.3) (see Table 2).

Regarding the level of "satisfaction," the most prevalent category was moderate (fi = 63; % = 42.0) (see Table 3).

Table 3. Satisfaction level of users attended in private pharmacies in Northern Lima

Satisfaction level	n = 150	
	fi	%
High	45	30.0
Moderate	63	42.0
Low	42	28.0

Table 4. Cross-tabulation by satisfaction variable and association verification

Sociodemographic characteristics	Satisfaction						Kendall's tau-b coefficient	p-value
	n = 150							
	High		Moderate		Low			
	fi	%	fi	%	fi	%		
Age							0.433	0.207*
18–30 years	9	23.1	20	51.3	19	25.6		
31–50 years	12	28.6	18	42.9	12	28.6		
51–65 years	22	38.6	20	35.1	15	26.3		
>65 years	5	41.7	2	16.7	5	41.7		
Sex								0.034**
Male	18	34.0	20	37.7	15	28.3		
Female	30	30.9	40	41.2	27	27.8		
Socioeconomic level							0.609	0.001*
Low	14	21.9	30	46.9	20	31.3		
Middle	34	41.5	28	34.1	20	24.4		
High	1	33.3	1	33.3	1	33.3		
Very high	0	0.0	0	0.0	1	100.0		
Educational level							0.192	0.560*
No formal education	0	0.0	1	50.0	1	50.0		
Primary	13	21.3	28	45.9	20	32.8		
Secondary	23	35.4	25	38.5	17	26.2		
Technical	11	57.9	5	26.3	3	15.8		
University	1	33.3	1	33.3	1	33.3		

* Kendall's tau-b

** Chi-square

Regarding the verification of the association between “satisfaction” and the “sociodemographic characteristics” of the study participants, significant associations were found in the categories “sex” ($p = 0.034$) and “socioeconomic level” ($p = 0.001$) (see Table 4).

DISCUSSION

Investigating user satisfaction and sociodemographic characteristics in private pharmacies in Northern Lima allows for a better understanding of the factors influencing customer satisfaction in a sector that is crucial for public health ⁽¹⁵⁾. This study provides a detailed perspective on how sociodemographic variables such as age, sex, educational level, and economic status are associated with users' perceptions and expectations in this specific region ⁽¹⁶⁾. The findings may serve as a basis for developing improvement strategies in pharmacy services, thereby contributing to more personalized and efficient care.

Furthermore, research conducted in an urban context such as Northern Lima, characterized by considerable socioeconomic diversity, provides valuable and specific data that can guide public policies and commercial practices, ultimately improving service quality and user satisfaction in the pharmaceutical field ⁽¹⁷⁾.

With regard to the verification of associations between variables, a significant association was reported between satisfaction and sex ($p=0.034$). Several studies have also reported a significant association between user satisfaction and sex in private pharmacies. For instance, Alzahrani et al. ⁽¹⁸⁾ found that women reported higher levels of satisfaction, particularly concerning staff friendliness and clarity of medication information. Similarly, research by Kitole et al. ⁽¹⁹⁾ revealed that men placed greater value on the speed of service, whereas women emphasized the empathy of pharmacy staff. A third study, conducted by Barghouth et al. ⁽²⁰⁾, identified that women tended to engage more actively with staff, contributing to a more positive experience. These findings suggest

that differences in expectations and interaction styles, depending on sex, can directly influence perceived satisfaction, underscoring the importance of differentiated service strategies to enhance user experience.

Conversely, a study by Kebede et al. ⁽²¹⁾ found no significant differences in satisfaction by sex, arguing that factors such as waiting time, drug availability, and pricing play a greater role in determining satisfaction than sex itself. These discrepancies may be explained by differing sociocultural contexts and variations in measurement criteria, highlighting the need for more standardized and region-specific studies ⁽²²⁾.

Regarding the significant association between satisfaction and socioeconomic status, Molla et al. ⁽²³⁾ reported that users with higher educational and economic levels expressed greater satisfaction, suggesting that these groups tend to have higher expectations but also greater ability to positively assess a well-structured service. Similarly, Kabba et al. ⁽²⁴⁾ revealed that individuals from higher socioeconomic strata reported better perceptions of drug access and the quality of pharmaceutical care, which directly influenced satisfaction. On the other hand, a study by Beyene et al. ⁽²⁵⁾ found no significant differences in satisfaction across socioeconomic levels. The authors argued that in contexts where pharmacy options are limited and the community values proximity, personal treatment, and trust in staff, satisfaction depends less on economic level and more on relational and accessibility factors. This finding challenges the generalization of the association between socioeconomic status and satisfaction, emphasizing the importance of local context and qualitative variables that may weigh as heavily as, or more than, material conditions.

This study faced limitations, such as the potential for selection bias, since participants may not be fully representative of the total population of private pharmacy users in the area. In addition, the cross-sectional nature of the study precludes establishing causal relationships between the variables of "satisfaction" and "sociodemographic characteristics." Reliance on self-reported surveys may also introduce response bias, as factors such as participants' willingness to engage or their interpretation of questions may affect the validity of the findings.

Future studies are recommended to adopt longitudinal designs to analyze changes in satisfaction over time and to establish more robust

causal relationships. Expanding the sample to include a greater diversity of users would improve the representativeness of the results. Moreover, employing mixed methods, combining quantitative surveys with qualitative interviews, could provide deeper insight into user experiences. It is also essential to consider pharmacy-specific contextual factors, such as service quality and the physical environment, for a more comprehensive evaluation of satisfaction. Finally, comparing results with data from other regions or metropolitan areas would help identify relevant patterns and differences, thereby enriching the external validity of the study.

Conclusions

This study concludes that significant associations exist between satisfaction and sex ($p=0.034$), as well as between satisfaction and socioeconomic status ($p=0.001$). Future research could explore the influence of psychological and behavioral variables, such as perceived service quality and pharmacy loyalty, on user satisfaction. Likewise, it is necessary to investigate differences in satisfaction and sociodemographic characteristics between users of private and public pharmacies, which would allow for a better understanding of the motivations and needs of different user groups.



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