

ORIGINAL

Waiting time and satisfaction level in adult outpatient traumatology patients in a hospital in Cajamarca, 2025

Tiempo de espera y nivel de satisfacción en pacientes adultos ambulatorios de Traumatología en un hospital de Cajamarca, 2025

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ABSTRACT

Introduction: patient satisfaction is an essential indicator of healthcare quality, and waiting time significantly influences their perception of the service received.

Objective: to determine the degree of relationship between waiting time and the level of satisfaction in adult outpatients attending the traumatology service of a hospital in Cajamarca, 2025.

Method: this is a quantitative, analytical, and cross-sectional study with a non-probabilistic convenience sample of 83 patients. A validated 25-item questionnaire is used, measuring five dimensions of satisfaction and waiting times across different areas. Statistical analysis includes the chi-square test and Spearman's rho.

Results: a significant negative correlation is found between waiting time and satisfaction level ($p<0,001$; $Rho=-4,16$). A total of 60,2 % of patients report being satisfied, and 37,3 % report being pleased. The longest delays are identified in the admissions area. Variables such as age ($p=0,049$) and type of insurance ($p<0,001$) show a significant association with satisfaction.

Conclusions: reducing waiting times, especially in initial administrative processes, may increase outpatient satisfaction.

Keywords: Waiting Time; Patient Satisfaction; Outpatient Care; Traumatology; Public Hospital.

RESUMEN

Introducción: la satisfacción del paciente es un indicador esencial de la calidad de la atención en salud, y el tiempo de espera influye significativamente en su percepción del servicio recibido.

Objetivo: determinar el grado de relación entre el tiempo de espera y el nivel de satisfacción en pacientes adultos ambulatorios del servicio de traumatología en un hospital de Cajamarca, 2025.

Método: el estudio es cuantitativo, analítico y transversal, con una muestra no probabilística por conveniencia de 83 pacientes. Se utiliza un cuestionario validado con 25 ítems, mide cinco dimensiones de satisfacción y tiempos de espera en distintas áreas. El análisis estadístico incluye chi-cuadrado y Rho de Spearman.

Resultados: se encuentra una correlación negativa significativa entre tiempo de espera y nivel de satisfacción ($p<0,001$; $Rho=-4,16$). El 60,2 % de los pacientes se encuentra satisfecho y el 37,3 % complacido. Las mayores demoras se identifican en el área de admisión. Variables como edad ($p=0,049$) y tipo de seguro ($p<0,001$) muestran asociación significativa con la satisfacción.

Conclusiones: reducir los tiempos de espera, especialmente en los procesos administrativos iniciales, puede incrementar la satisfacción del paciente ambulatorio.

Palabras clave: Tiempo de Espera; Satisfacción del Paciente; Atención Ambulatoria; Traumatología; Hospital Público.

INTRODUCTION

The effectiveness and availability of the resources provided were significantly impaired by waiting times in the healthcare system. This factor was defined as the time measured from the user's arrival at the healthcare institution until receiving medical assistance.⁽¹⁾ In addition, the length of waiting time is influenced by a variety of factors, including clinical, sociodemographic, and cultural factors.⁽²⁾ In this regard, international studies have shown that health service users had a significant appreciation for both waiting time and its objective duration, as high expectations lead to decreased satisfaction, regardless of the amount of time elapsed.⁽³⁾ Similarly, scientific research in India indicated that patients with a wait time of more than 45 minutes experienced a notable reduction in reported satisfaction levels, highlighting how the length of their stay influenced their perception of service performance.⁽⁴⁾ Similarly, research in a South Asian country involving 430 patients reflected the negative effect on beneficiaries' assessment of health coverage, with an average waiting time of 164 minutes being identified as the most unfavorable factor.⁽¹⁾ In addition, research conducted in China with 292 outpatients concluded that the gap between expected and actual waiting times was a determining factor in user satisfaction, regardless of the objective duration of the wait.⁽³⁾

According to their perception and expectations, patients consider satisfaction to be the main indicator of quality of care, which is influenced by elements such as communication, treatment received, infrastructure, efficiency, and the time experienced during their outpatient visit.^(5,6) Studies have shown that patients who enjoy additional consultation time tend to report higher satisfaction scores, as this allows them to have more effective interaction with healthcare professionals.⁽⁷⁾ On the other hand, a study conducted in Saudi Arabia emphasizes that the waiting time prior to receiving healthcare was not a constant value, as it varied depending on the country in which the person being treated was located, as well as the particular health center they visited.⁽⁸⁾ In addition, research in Ethiopia showed that patients who attended on busier days, such as Mondays, were almost three times more likely to have to wait longer, which decreased their overall satisfaction.⁽⁹⁾ At the national level, an analysis based on the ENSUSALUD-2015, which covered more than 13 000 Peruvian patients, revealed that an average waiting time of 104,2 minutes was associated with lower levels of satisfaction.⁽¹⁰⁾

Thus, it has been determined that patient satisfaction is influenced by waiting time, according to an Indonesian scientific review, which found that long waits could also be linked to the type of insurance that patients have, with those with national insurance experiencing longer waiting times and perceiving higher levels of inequality and dissatisfaction.⁽¹¹⁾ These findings confirm the value of effective waiting time as a decisive indicator in healthcare intervention. In Peru, a study conducted at a hospital in Lima revealed a negative correlation, indicating that about 24 % of patients showed greater dissatisfaction when waiting times were extended.⁽¹²⁾ At the local level, it was observed that time management in outpatient consultations remains a significant challenge, as the assessment of service levels differs markedly depending on waiting times.⁽¹³⁾

In Cajamarca, studies showed that long waiting times are a challenge for hospital management. An example of this was a health center (2022), where around 49 % of patients experienced inadequate waiting times.⁽¹⁴⁾ Meanwhile, at a hospital in Chota, more than 66 % of patients expressed satisfaction with the waiting time, in contrast to 34 % who expressed dissatisfaction.⁽¹³⁾ However, these previous studies have focused on emergency services, leaving a gap in the analysis of outpatient consultations. Due to the limited amount of local data, the need for this study was reinforced. In this regard, the following question arises: How does waiting time relate to the level of satisfaction? Based on the assumption that there is a relevant association between these variables, the main purpose of the study is to determine the degree of relationship between them. Its specific goals include determining the most frequent waiting time for each area of study, identifying the predominant levels of satisfaction in the dimensions evaluated, and finding other determinants that influence the level of patient satisfaction in the orthopedic department of a hospital in Cajamarca in 2025.

METHOD

This research was part of a basic study, as it was characterized by a genuine interest in expanding knowledge and scientific curiosity.⁽¹⁵⁾ Likewise, a quantitative approach was used, given that figures were collected and analyzed to measure, describe, and explain the proposed hypothesis. The study design was non-experimental, as the waiting time was not manipulated to influence the expected result. It was also analytical in nature, as its purpose was to establish relationships between variables rather than simply describe them. It was classified as cross-sectional, as the data were detailed and collected at a single point in time, without following up on the participants.⁽¹⁶⁾

The study population consisted of all adults seen in the outpatient orthopedic department of a hospital in Cajamarca. February 2025 was taken as the reference month, as it showed the highest volume of care, with

a total of 253 patients. Therefore, the sample consisted of 83 participants, calculated with a margin of error of 8 %, statistical certainty of 92 %, and a projected value of 50 %. The sample allocation was not random but was based on the researcher's assessment or specific criteria, which is why the sampling was considered non-probabilistic for convenience.⁽¹⁷⁾

In order to collect all the records, a questionnaire proposed by Asqui in 2022 was used as a tool, which allowed the relationship between waiting time and satisfaction of adult outpatients to be determined. This instrument consists of informed consent, the presentation of the methodological work, the demographic data of the respondent, and the questionnaire for the variables, which consists of 25 closed questions. Regarding the waiting time variable, three questions were used for three different areas of care with ordinal scale response options in which patients selected the time elapsed in different stages of the care process, each with ranges from 10 to 15 minutes (Very Low), 16 to 30 minutes (Low), 31 to 59 minutes (Regular), 1 to 2 hours (High), and more than 2 hours (Very High). Likewise, the satisfaction variable was evaluated using 22 questions distributed across five dimensions: reliability (five items), safety (four items), responsiveness (four items), empathy (five items), and tangible aspects (four items), using the Likert scale as a measurement method, with 1 being never and 5 being always. The results were categorized on a scale of 22 to 51 (dissatisfied), 52 to 81 (satisfied), and 82 to 110 (delighted). This survey showed high consistency with a Cronbach's alpha coefficient of 0,920, demonstrating adequate reliability for the analysis of the variables.⁽¹⁸⁾

When reviewing the data, a matrix table was created to efficiently organize and outline the information collected. The figures were then interpreted using SPSS version 27 statistical software to perform both descriptive and inferential statistical analyses. In the descriptive process, tables were used to present the relative frequency and corresponding percentage of each dimension of the two variables under study, in order to illustrate them clearly and systematically. On the other hand, the inferential evaluation using the chi-square test allowed the hypothesis to be tested considering a significance level of $\alpha=0,05$.⁽¹⁹⁾ In addition, Spearman's Rho coefficient was used to determine the degree of association.⁽²⁰⁾

In this article, essential ethical principles were rigorously safeguarded, ensuring the integrity and rights of the participants. First, the principle of respect for individuals was guaranteed by promoting their autonomy, which was made effective through clear and transparent written informed consent. In addition, in strict adherence to the principle of non-maleficence, measures were implemented to prevent any type of physical, mental, or emotional harm, adapting to data collection strategies that prioritized the well-being and comfort of those involved. Finally, the principles of confidentiality and data protection were central to the study, and patient privacy was protected through the anonymous storage and interpretation of information.⁽²¹⁾

RESULTS

Table 1. Sociodemographic characteristics of outpatient trauma patients, Cajamarca Hospital, 2025

Sociodemographic characteristic	Category	Frequency (n)	Percentage
Age	18-25	10	12,0
	26-35	18	21,7
	36-45 years	26	31,2
	46-55	15	18,1
	>55 years old	14	16,9
Gender	Male	34	41,0
	Female	49	59,0
Educational level	Illiterate	7	8,4
	Primary	12	14,5
	Secondary	22	26,5
	Higher technical	20	24,1
	Higher university graduate	22	26,5
Type of insurance	SIS	74	89,2
	ESSALUD	6	7,2
	Private	3	3,6
Type of user	New	25	30,1
	Continuing	58	69,9

The sample consists of 83 health service users, whose sociodemographic characteristics provide a relevant overview for analyzing waiting times and satisfaction levels. In terms of age distribution, Table 1 shows that the largest proportion of respondents are in the 36-45 age group, at 31,2 %. In terms of gender, there is a female predominance of 49 participants, representing 59 %. In relation to educational level, a heterogeneous distribution is identified, with the categories of secondary education and higher university education each accounting for 26,5 %. In terms of insurance type, the vast majority of users were affiliated with the Comprehensive Health Insurance (SIS), representing 89,2 % of the sample. Finally, 69,9 % of respondents were reported to be continuing users.

Table 2. Waiting times in different areas of outpatient traumatology care, Cajamarca Hospital, 2025

Level	V1		D1		D2		D3	
	Waiting time		TE on admission.		TE in waiting room		Time spent in the doctor's office	
	F	%	F	%	F	%	F	%
Very low	10	12,0	13	15,7	8	9,6	39	47,0
Low	34	41,0	14	16,9	23	27,7	30	36,1
Fair	33	39,8	16	19,3	23	27,7	10	12,0
High	6	7,2	16	19,3	17	20,5	2	2,4
Very high	0	0	24	28,9	12	14,5	2	2,4
Total	83	100,0	83	100,0	83	100,0	83	100

Table 2 shows that the total waiting time is concentrated in the “low” category (41 %), followed by “moderate” (39,8 %). In terms of waiting time for admission, the data reflects a more variable distribution, with the most notable being 28,9 % categorized as “very high” (more than 2 hours). Regarding waiting time in the waiting room before receiving medical care, it was found that 27,7 % of patients experience “low” or “average” waiting times. Finally, in the category of consultation time in the orthopedic clinic, 47 % of respondents reported “very low” consultation time.

Table 3. Patient satisfaction level by dimension in outpatient orthopedic consultations, Cajamarca Hospital, 2025

Level	V2		D1		D2		D3		D4		D5	
	Outpatient satisfaction level		Reliability		Responsiveness		Safety		Empathy		Tangible aspects	
	F	%	F	%	F	%	F	%	F	%	F	%
Dissatisfied	2	2,4	4	4,8	21	25,3	6	7,2	3	3,6	8	9,6
Satisfied	50	60,2	51	61,4	47	56,6	37	44,6	46	55,4	41	49,4
Satisfied	31	37,3	28	33,7	15	18,2	40	48,2	34	41,0	34	41,0
Total	83	100,0	83	100,0	83	100,0	83	100	83	100,0	83	100,0

In table 3, overall, the level of “Satisfied” is predominant with 60,2 % and “Pleased” represents 37,3 %, together accounting for the majority of patients. In each dimension, there is a prevalence of different levels of satisfaction. “Satisfied” prevails in reliability with 61,4 %, responsiveness with 56,6 %, empathy with 55,4 %, and tangible aspects with 49,4 %. “Pleased” is most relevant in the safety dimension with 48,2 %.

Table 4. Analysis of the association between waiting time and level of satisfaction in trauma patients, Cajamarca Hospital, 2025

			Waiting time					P	Spearman's Rho
			Very low	Low	Average	High	Total		
Level of satisfaction	Dissatisfied	Count	0	1	0	1	2	<0,001*	-4,16
		% within Satisfaction level	0	50,0	0,0	50,0	100,0		

	Satisfied	Count	1	18	28	3	50		
		% within Satisfaction level	2,0	36,0	56,0	6,0	100,0		
	Satisfied	Count	9	15	5	2	31		
		% within Satisfaction level	29,0	48,4	16,1	6,5	100,0		
Total	% within Satisfaction level	Count	10	34	33	6	83	<0,001*	-4,16
			12,0	41,0	39,8	7,2	100,0		

In table 4, the relationship between individuals' level of satisfaction and perceived waiting time in the service evaluated reveals a statistically significant link ($p < 0,001$; $Rho = -4,16$). In detail, the group classified as "satisfied" is predominantly associated with "low" waiting times at 48,4 %. On the other hand, users classified as "satisfied" are mainly concentrated at 56 %, i.e., those who perceive a "regular" waiting time. As for the "dissatisfied" category, although numerically marginal, it presents an interesting finding: 50 % of cases are distributed across both "low" and "high" waiting times.

Table 5. Sociodemographic factors associated with the level of satisfaction in outpatient traumatology patients, Cajamarca Hospital, 2025

		Level of Satisfaction						Total	P	Spearman's Rho
		Dissatisfied		Satisfied		Pleased				
		Count	% within Satisfaction level	Count	% within Satisfaction level	Count	% within Satisfaction Level			
Age of respondent	18-25	0	0,0	4	40,0	6	60,0	0,53	-0,225*	
	26-35	0	0,0	9	50,0	9	50,0			
	36-45	1	3,8	17	65,4	8	30,8			
	46-55	1	6,7	10	66,7	4	26,7			
	Over 55	0	0	10	71,4	4	%			
Total		2	2,4	50	60,2	31	37,3	100		
Gender	Male	0	0,0	22	67,7	12	35,3	0,440	0,008	
	Female	2	4,1	28	57,1	19	38,8			
Total		2	2,4	50	60,2 %	31	37,3	100		
Level of education	Illiterate	0	0,0	5	71,4	2	28,6	0,240	0,175	
	Primary	0	0,0	7	58,3	5	41,7			
	Secondary	2	9,1	16	72,7	4	18,2			
	Technical degree	0	0,0	11	55,0	9	45,0			
	University degree	0	0,0	11	50,0	11	50,0			
Total		2	2,4	50	60,2 %	31	37,3	100		
Type of insurance	SIS	1	1,4	48	64,9	25	33,8	<0,001*	0,143	
	ESSALUD	0	0,0	0	0,0	6	100,0			
	Individual	1	33,3	2	66,7	0	0,0			
Total		2	2,4	50	60,2	31	37,7	100		
Type of user	New	1	4,0	15	60,0	9	36,0	0,821	0,031	
	Continuator	1	1,7	35	60,3	22	37,9			
Total		2	2,4	50	60,2 %	31	37,3	100		

Table 5 shows that not all sociodemographic characteristics have a significant relationship with the level of satisfaction of the patients surveyed; only age and type of insurance show a statistically relevant association.

A negative correlation is reported for age ($\rho = -0,225$). Likewise, 60,2 % of the total sample reported being satisfied, with higher percentages in the “satisfied” category observed in the age group 36 years and older.

In the case of the type of insurance of the patients, this is also substantial due to its chi-square value ($p < 0,001$). In general, 60,2 % of the 83 people are satisfied, with the group of people affiliated with the Comprehensive Health Insurance (SIS) standing out, with 64,9 % satisfaction. All ESSALUD policyholders are satisfied. Finally, in the group with private insurance, 66,7 % say they are satisfied.

DISCUSSION

This study examines two dimensions of quality in outpatient care: waiting time and patient satisfaction. The first refers to the time between the patient’s arrival at the health facility and the start of care, which is a key element that, if prolonged, can have a negative impact on the perception of the service received.^(3,4,11) On the other hand, patient satisfaction is a subjective but essential indicator in the evaluation of health service performance, influenced by various factors.^(5,7) Research conducted in Asia and Latin America has shown that the longer the perceived waiting time, the lower the level of satisfaction, even when the actual time is not excessive.^(22,23) Therefore, we sought to determine the relationship between waiting time and satisfaction.

This research finds a significant relationship between waiting time and the level of satisfaction of outpatient users of orthopedic outpatient services. This notable relationship has a negative association, where the Rho indicates that the longer the waiting time, the lower the level of satisfaction. Similarly, similar studies in several Asian countries indicate that waiting time has a negative impact on outpatient satisfaction, highlighting its impact on the overall perception of the service and showing a significant association with dissatisfaction when a standard waiting time is not considered.^(23,24,25) Another study also shows a negative correlation, however, it is a low association between satisfaction and long waiting times, where it is reported that the majority of respondents disagree with the item “I am satisfied with the waiting time before being seen”.⁽²⁶⁾ While these results are important, they cannot be extrapolated or generalized due to the type of sampling used.

Addressing the next research objective, which analyzes waiting times in the different phases of healthcare service, the results reveal that the total waiting time is mainly concentrated in the “low” and “fair” categories. Similarly, a study in Indonesia correlates with the results presented, where the majority experience fast waiting times.⁽²⁷⁾ Another study coincides in identifying that almost half of patients report a time that correlates with the “fair” category.⁽²⁸⁾ These data contrast with those documented by other researchers in Indonesia and Malaysia, who maintain that most patients experience times exceeding 60 minutes, which exceeds established standards.^(24,29,30) Also, in some centers, average waiting times are extremely long, up to 338 minutes.⁽³¹⁾ However, the data obtained suggest a more efficient overall performance compared to the total times documented in the literature.

In relation to admission waiting times, many patients classify them as “high,” which represents a significant burden at their first point of contact with the service. These results contrast with those reported in two academic studies, where waiting times are not as long, as they are classified as “low”.^(28,32) With regard to waiting room time, a diverse distribution is observed: a considerable group of patients experience “low” and “regular” waiting times. This is consistent with the findings in Ayacucho, where the average waiting time is 26,6 minutes.⁽³²⁾ Similarly, in a different Peruvian region, a study shows that just under half of users wait more than 30 minutes.⁽²⁸⁾ Finally, in terms of consultation time in traumatology, the data reflects positive performance: a large proportion of respondents report a “very low” waiting time. This is supported by a study that shows average consultation times of 12,5 minutes (category “very low”) for patients who consider this adequate.⁽³¹⁾ Although waiting and consultation times in traumatology are low, there are still delays in admission, where long waiting times and inefficiencies affect the perception of the service.

Continuing with the analysis, the critical assessment of user satisfaction reveals a favorable trend, evidenced by a high concentration of responses in the “Satisfied” and “Pleased” levels. This finding coincides with previous studies conducted in Malaysia and the Galapagos, where a large percentage of patients report being pleased, reaching the maximum possible score.^(28,33)

With regard to the areas of “responsiveness,” “tangible aspects,” “reliability,” and “empathy,” high positive ratings are shown in the satisfaction levels. Despite the fact that these dimensions are well rated, with regard to empathy, a study in Nepal reveals that a significant group of participants are dissatisfied with the standard of care.⁽³⁶⁾ Meanwhile, another study mentions that the reliability dimension shows disparities related to deficiencies in the speed of care, the clarity of information provided, and the timely management of medical appointments.⁽³⁴⁾ This phenomenon is related to the lack of willingness on the part of healthcare providers to understand and address patients’ demands. In relation to the safety dimension, it is classified as complacent, supported by research in Venezuela and Peru, whose results highlight that it was the highest rated.^(34,37) However, it is important to note that in some contexts there are significant deficiencies that call into question the “compliant” categorization. As reported in Ecuador, staff are unwilling to provide adequate care, there is a lack of respect for patient privacy, and little time is devoted to clarifying doubts, which reduces patient confidence in professionals.⁽³⁸⁾

Ultimately, the results helped identify two sociodemographic factors that were shown to have a significant impact on patient satisfaction: age and type of insurance. Regarding age, the findings show an inverse association between age and satisfaction level. This observation contrasts with research in which patients over 40 years of age are significantly more likely to express satisfaction in general.⁽³⁶⁾ However, other studies identify greater satisfaction in young adults.⁽²³⁾ This correlates with the results, which show satisfaction in the vast majority of people within this age range. Similarly, there is a significant link between the type of insurance and the level of patient satisfaction. In this regard, patients enrolled in the SIS (Social Security System) report high levels of satisfaction, while users with private insurance express dissatisfaction. This result is consistent with another Peruvian study, where SIS users predominate and show a favorable perception of the service.⁽³⁴⁾ This is attributed to the fact that those affiliated with private insurance have high expectations for their outpatient stay compared to those affiliated with the SIS, who are familiar with the health system.

CONCLUSIONS

A statistically significant negative correlation was identified between waiting time and satisfaction level, showing that the longer the waiting time perceived by outpatients, the lower their satisfaction level.

The most frequent total waiting time was categorized as “low.” However, in specific areas such as admission, “very high” waiting times were evident. In contrast, waiting room times were evenly distributed between “low” and “fair”. Finally, within the traumatology office, a time classified as “very low” predominated.

A large number of patients were classified as “satisfied.” Consistent with these results, four of the five dimensions evaluated were rated with a good degree of satisfaction. However, safety was the dimension with the highest proportion of satisfied patients.

Significant associations were found between satisfaction and some sociodemographic variables, such as age and type of insurance. Older patients tended to report lower levels of satisfaction, while those with SIS insurance had better perceptions of the service than those with private insurance.

RECOMMENDATIONS

It is recommended that future research on waiting times and the level of satisfaction of outpatients in the specialty of traumatology adopt a probabilistic methodological approach. This change would allow for greater representativeness of the population and facilitate the generalization of results at the national level. The implementation of techniques such as random or stratified sampling would contribute to obtaining more robust findings that are applicable to various realities of the health system in Peru.

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