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Research Article

Effects of Waiting Time on Outpatient Satisfaction at Hospitals in Phalga, Rivers State

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Abstract

Patient satisfaction is a major indicator of healthcare quality and an essential outcome of patient-centered care, particularly in outpatient departments where service encounters are brief and time-sensitive. Outpatient waiting time is the beginning of interaction between patients and hospitals and it influences the satisfaction of patients in hospitals. Waiting time is widely recognized as one of the most visible and significant aspects of outpatient care, shaping patients' perceptions of service quality and overall satisfaction. This study compared the effects of waiting time on outpatient satisfaction in public and private hospitals in PHALGA, Rivers State. A facility-based cross-sectional design was used, and data were collected from 400 randomly selected outpatients across 14 hospitals using structured questionnaires. Independent Sample T-test was used to compare the mean differences of outpatient waiting time across satisfaction levels, and binary logistic regression was used to identify the determinants of outpatient satisfaction. The odd ratio (OR) and its 95% CI were estimated and its significance was set at $P \leq 0.05$. Findings showed that average waiting times were longer in public hospitals (107.13 minutes, SD = 2.57) than in private hospitals (95.01 minutes, SD = 2.56). Satisfaction levels were higher in public hospitals (52.88%) than private hospitals (46.77%) despite longer waiting times. Satisfied patients had slightly higher mean scores in both public and private hospitals than dissatisfied patients. Visit status, payment method and total waiting time were significant determinants of satisfaction in both public and private hospitals. In public hospitals, patients with tertiary education (OR = 1.10 95% CI: 1.05 – 1.45) were more likely to be satisfied. In private hospitals, patients aged 71+ (OR = 0.77, CI: 0.56 – 0.98) were less likely to be satisfied. This study concludes that while waiting time is a major determinant of outpatient satisfaction its effect is confounded by age, education, visit status and payment method. The study recommends that hospital management should endeavor to set clear waiting time benchmarks, integrate digital queue management systems and improve service coordination to improve outpatient satisfaction.

1. Introduction

Patient satisfaction has become a widely recognized key indicator of healthcare quality worldwide, reflecting the extent to which health services meet patients' expectations, needs, and preferences [1, 2]. In outpatient care, patient satisfaction is more strongly influenced by

service delivery processes, particularly waiting time, communication, and staff responsiveness than by clinical outcomes alone, as patients typically spend considerably more time waiting than interacting with healthcare providers. Evidence from global frameworks and empirical studies consistently shows that prolonged waiting undermines satisfaction even when clinical care is perceived as adequate [3–7]. Among the many process indicators influencing patient satisfaction, waiting time is particularly important and has consistently emerged as a major determinant of satisfaction, influencing patients' trust in healthcare systems, willingness to return for care, and adherence to medical advice [8]. Waiting time is the total period a patient spends from registration until completion of consultation or investigation and it shapes the first interaction between patient and provider and often frames the overall perception of care quality [9–11].

Globally, long waiting times have been associated with poorer dissatisfaction, disrupted service flow, inefficient use of available resources, and a decline in the utilization of healthcare services which can ultimately reduce patients' willingness to return for care, particularly in low-resource healthcare settings [8, 12, 13]. Recent research differentiates between actual waiting time and perceived waiting time, emphasizing that patient's satisfaction is often more strongly influenced by how waiting is communicated and managed rather than by duration alone [6].

Research from low- and middle-income countries suggests that outpatient satisfaction is strongly influenced by patient's waiting experiences, which are largely determined by staff availability, efficiency of administrative processes, and the organization of services. Findings from a study in Indonesia links long waiting times to patient dissatisfaction despite availability of essential services [14].

A study conducted in a Kenyan private hospital found that long waiting times negatively influence patients' perception of care quality, increased dissatisfaction, and may diminish trust in health facilities even where services are affordable [15]. Similarly studies in Ethiopia and Rwanda, [7, 16]. Reported that long waiting times significantly reduced patient satisfaction, particularly in public hospitals where patient load exceeded service capacity.

In Nigeria, long outpatient waiting time remains a recurrent problem and a major source of patient dissatisfaction. Public hospitals are particularly affected due to high patient volume, inadequate staffing, reliance on manual record systems, and poor appointment scheduling practices [4, 5]. Although private hospitals are generally perceived as more efficient, studies indicate that dissatisfaction related to waiting time still occurs, especially during peak periods and for specialized services [17].

Several Nigerian studies have reported that longer waiting times do not always lead to equal reductions in patient satisfaction, especially in public hospitals where subsidized services and lower expectations may increase tolerance for delays. For example, [18]. Reported that despite long waiting times, many patients expressed moderate to high satisfaction. Okoloagu & Ndibuagu [19] also observed high outpatient satisfaction in Rivers State despite reports of long waiting times, suggesting cultural tolerance when quality of care meets expectations. This highlights the complex relationship between waiting time and satisfaction within different healthcare contexts.

Socio-demographic factors such as age, gender, education, income, and payment method can further shape satisfaction and interactions with waiting time. Older patients often demonstrate greater tolerance for delays [20], while education may influence expectations and the ability to navigate hospital systems [21]. Payment method also matters as out-of-pocket payers frequently report higher satisfaction, possibly due to bypassing bureaucratic procedures [14, 22].

Port-Harcourt Local Government Area (PHALGA), Rivers State is a major urban center serving a diverse mix of public and private hospitals confronted with an increase of outpatients. Despite this, empirical evidence comparing outpatient satisfaction and waiting time across hospital ownership types remains limited. This study compares the effect of waiting time on outpatient satisfaction in public and private hospitals in PHALGA. By analyzing waiting time patterns and satisfaction outcomes, this study provides evidence-based insights that can guide service improvement, enhance patient experience, and support policy decisions aimed at strengthening healthcare delivery in Rivers State.

2. Methodology

2.1. Study Setting

The study was conducted across 14 hospitals (3 public, 11 private) in Port Harcourt Local Government Area (PHALGA), Rivers State. PHALGA is a highly populated urban area with a wide range of public and private hospitals offering outpatient services to a diverse population. Public hospitals typically attend to a large number of outpatients while private hospitals operate on a fee-for-service arrangement with fewer outpatients. The existence of both facility types in PHALGA makes it ideal for this study. PHALGA has a total of 90 private hospitals and 8 public hospitals. Public hospitals are directly managed by the Rivers State Hospital Management Board while the Rivers State Ministry of Health regulates the operations of both public and private hospitals.

2.2. Study Design and Study Population

A hospital-based cross-sectional design was used in this study. Data were collected at a single point in selected private and public hospitals in PHALGA using a structured questionnaire. The study population comprised of patients seeking medical care in private and public hospitals in PHALGA, Rivers State. Patients who were critically ill and not physically or mentally able to respond to the questionnaire were exempted from the study.

2.3. Sample Size and Sampling Technique

The calculated sample size of 400 patients (200 patients for public and private hospitals respectively) was estimated using the Leslie Kish formula for comparing two groups. Hospitals were stratified into privately owned and publicly owned hospitals and from this strata, 40% of public hospitals (3) and 12% of private hospitals (11) were purposively selected bringing it to a total of 14 hospitals. Simple random sampling technique was used to select both the hospitals and the respondents from each of the hospitals.

2.4. Data Collection Procedure and Instrument

Primary data were obtained using a structured questionnaire adapted from [23] and developed from relevant literature over a four- to eight-week period. The questionnaire combined waiting time assessment and a patient satisfaction survey, with responses rated on a 4-point Likert scale. The questionnaire had five sections: Section A included 11 questions on socio-demographic factors. Section B included 13 questions assessing waiting time. Section C included 4 questions on the type of service sought. Section D included 11 questions on the availability of health personnel at service points Section E included 7 questions measuring patient satisfaction with services. Face and content validity were used to ascertain the validity of the research instrument, while reliability was determined using Cronbach alpha with a Cronbach alpha coefficient of 0.70, which was significant for this study.

2.5. Statistical Analysis

Data were analyzed using Stata (version 16). The level of outpatient satisfaction was categorized as "satisfied" or "not satisfied". Independent Sample T-test was used to compare the relationship between waiting time and satisfaction, and binary logistic regression was used to identify the determinants of outpatient satisfaction.

3. Results

Outpatients were drawn from both public and private hospitals, and their sociodemographic characteristics provided important context for interpreting satisfaction outcomes Table 1. The majority of respondents were younger or middle-aged (≤30 years and 31–50 years), while only a small proportion were aged 71 years and above. Female patients slightly outnumbered males, reflecting higher healthcare utilization among women. Most respondents had at least secondary or tertiary education, suggesting a relatively literate sample capable of informed responses. Employment and income status varied across self-employment, formal employment, and unemployment, representing diverse socio-economic backgrounds. Family size differed, though most had between one and four children.

The average waiting times were analysed in Figure 1 and noticeable differences were observed between public and private hospitals. Public hospitals had an average waiting time of 107.13 minutes (SD = 2.57), whereas private hospitals had an average of 95.01 minutes (SD = 2.56). The results show that although patients in private hospitals had shorter waiting times when compared to those in public hospitals, both sectors still experience average waiting times exceeding 90 minutes.

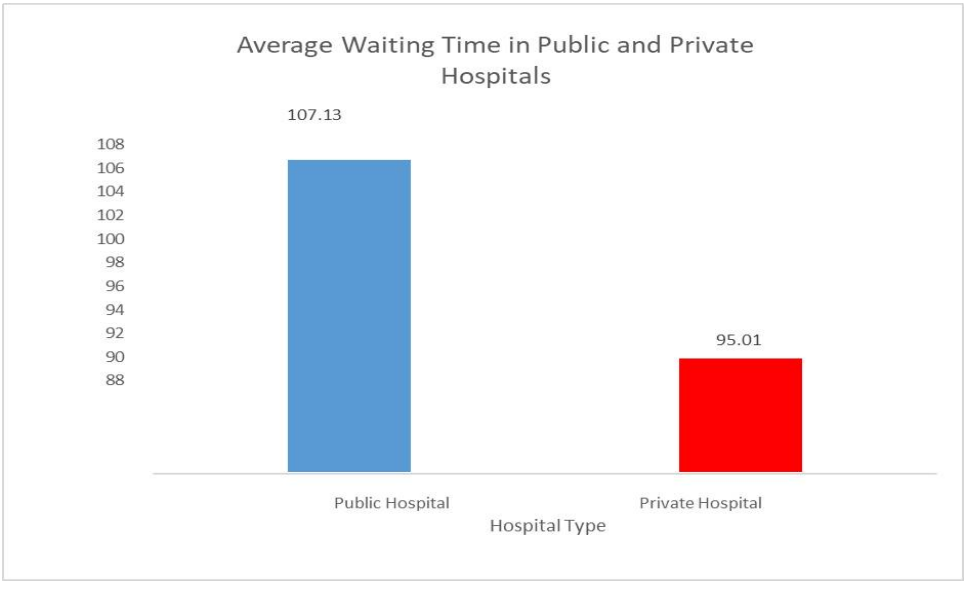

Figure 1: Average Total Waiting Time in Public and Private Hospitals

The level of satisfaction was assessed for both hospital types Figure 2. Public hospitals recorded slightly higher satisfaction despite longer waiting times, 52.88% of respondents were satisfied compared to 47.12% in private hospitals. Dissatisfaction was higher in private hospitals (53.23%) than in public ones (46.77%). This indicates that shorter waiting times in private facilities did not necessarily translate into greater satisfaction, with factors such as expectations, perceptions of fairness, and provider–patient interactions playing a more decisive role.

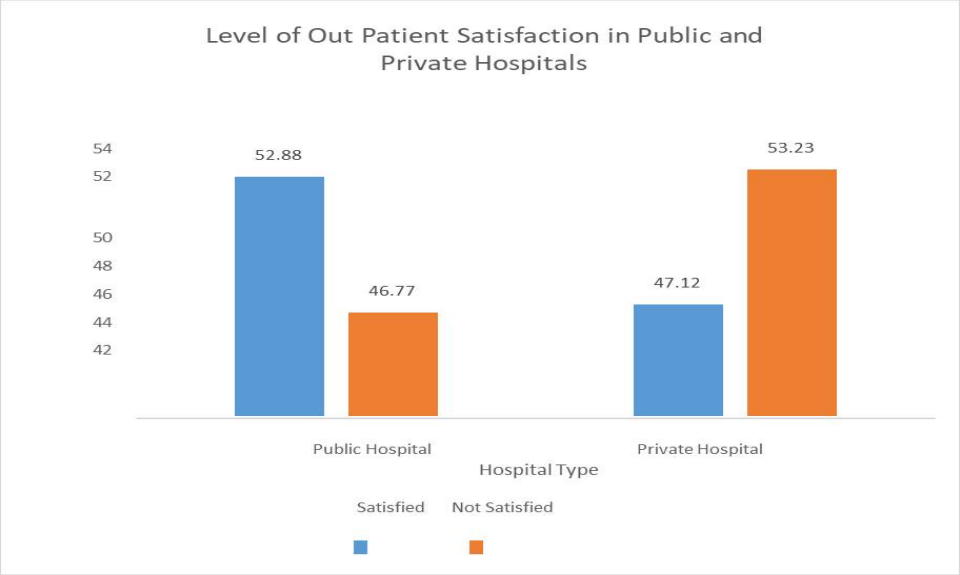

Figure 2: Level of Outpatient Satisfaction in Public and Private Hospitals

The difference in outpatient waiting time across satisfaction was examined to determine whether longer waiting time directly impacted how patients rated their experiences. In Figure 3 results showed no statistically significant association in either hospital type ($p \leq 0.05$). In private hospitals, dissatisfied patients had a mean satisfaction score of 8.05 compared to 8.30 among satisfied patients, while in public hospitals the respective scores were 7.91 and 8.13. Although satisfied groups consistently scored higher, the differences were not significant, suggesting that waiting time, while relevant, was not the dominant driver of satisfaction.

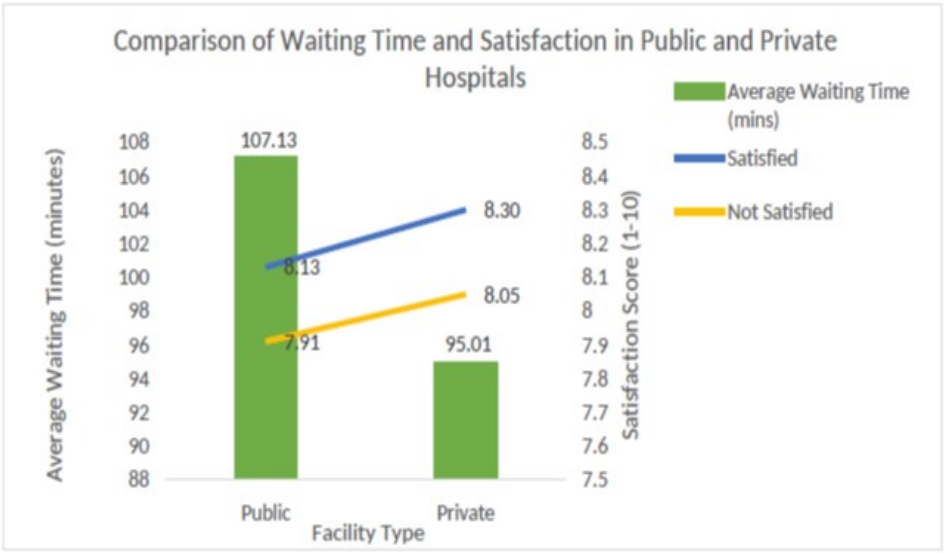

Figure 3: Comparison between Waiting Time and Satisfaction in Public and Private Hospitals

The determinants of outpatient satisfaction were assessed in Table 2 for private and public hospitals. In private hospitals, gender was not significantly associated with satisfaction, though males were slightly less likely to report satisfaction than females. Age showed a notable effect, with older patients (71+) more likely to report satisfaction, possibly reflecting tolerance or adjusted expectations. Repeat visits were associated with lower satisfaction, while out-of-pocket payment was significantly linked to higher satisfaction, likely due to reduced administrative delays and greater perceived value.

In public hospitals males had slightly higher odds of satisfaction compared to females, and older patients were again more satisfied than younger ones. Tertiary education was significantly associated with higher satisfaction, suggesting that educated patients may navigate hospital processes more effectively. As in private hospitals, repeat visits reduced satisfaction. Payment method was not statistically significant, though out-of-pocket patients reported marginally higher odds of satisfaction. Importantly, waiting time remained a significant predictor of satisfaction in public hospitals, with longer waits associated with lower ratings.

Table 1: Socio-Demographic Distribution of Respondents

Variable	Frequency	Percentage
Gender		
Male	198	49.50
Female	194	48.50
Age		
≤ 30	89	22.25
31 – 50	146	36.50
51 – 70	126	31.50
71 and above	31	7.75
Education		
No formal	82	20.50
Primary	111	27.75
Secondary	104	26.00
Tertiary	95	23.75
Employment		
Employed	107	26.75
Self-Employed	134	33.50
Unemployed	151	37.75
Monthly Income		
<30,000	136	34.00
30,000 – 100,000	125	31.25
Above 100,000	131	32.75
Number of Children		
0 – 2	164	41.00
3 – 4	124	31.00
5 and above	104	26.00
Visit Status		
First Time	191	47.75
Repeat Visit	201	50.25
Patient Status		
Employee/Staff	97	24.25
Independent	95	23.75
Staff dependent	102	25.50
Student	98	24.50
Payment Method		
HMO/Insurance	197	49.25
Out-of-pocket	195	48.75

4. Discussion

This study examined the effect of outpatient waiting time on satisfaction in private and public hospitals in PHALGA, Nigeria. The findings show that delays in accessing services in outpatient departments were evident in both sectors though they were more pronounced in public hospitals. This confirms findings from earlier studies in Nigeria [4, 5, 20] which provide evidence that long outpatient waiting times are common in public facilities. Although many studies report shorter waiting times in private hospitals international evidence shows this is not universal as an Iranian study [24] found that private hospitals had longer waiting times than public ones. Long outpatient waiting times can arise due to understaffing, inadequate infrastructure, high patient volumes, inefficient scheduling, poor record keeping and poorly coordinated patient flow management [5, 20, 25]. Similar trends of longer outpatient waiting times in public hospitals have been observed in Ethiopia and Rwanda studies [7, 16] where staff shortages and bottlenecks increased waiting suggesting that systemic constraints rather than hospital ownership alone drive waiting times.

Contrary to the common assumption that shorter waiting times automatically lead to higher satisfaction, public hospital patients reported slightly higher satisfaction than private hospital patients, despite longer waiting times. About 52.88% of public hospital patients were satisfied compared with 47.12% of private hospital patients. This finding contrast with studies [26, 27] which found that patients attending private facilities may report higher overall satisfaction but aligns with studies [7, 18, 21], who reported that patients in public facilities often express moderate-to-high satisfaction despite waiting for long periods, likely because subsidized services reduce expectations or create greater tolerance for delays.

Further statistical analysis revealed no significant association between actual waiting time and overall satisfaction in either sector. Although dissatisfied patients had slightly lower mean satisfaction scores, the differences were not significant. This supports work by [4, 19], which showed that when clinical outcomes and interpersonal care are perceived as good, patients may overlook long waiting times. [6] further explained that perceived waiting time which is how long a patient feels they waited, may influence satisfaction more than the measured duration. The minor difference in mean satisfaction between private and public hospitals among those satisfied with waiting time aligns with studies reporting marginally higher satisfaction in private facilities, such as [17, 28].

Socio-demographic variables shaped satisfaction in nuanced ways. In private hospitals, males were slightly less satisfied than females, while in public hospitals men were marginally more satisfied. Older patients in private hospitals were less likely to report satisfaction

Table 2: Determinants of Outpatient Satisfaction in Public and Private Hospitals

	Public Hospitals			Private Hospitals		
Variable	**OR**	**95% CI**	**P-Value**	**OR**	**95% CI**	**P-Value**
Gender						
Female	1.00			1.00		
Male	1.69	0.96 – 2.99	0.12	0.64	0.36 – 1.12	0.12
Age						
$\leq$ 30	1.00			1.00		
31 – 50	1.00	0.47 – 2.11	0.74	0.88	0.42 – 1.88	0.74
51 – 70	1.03	0.52 – 2.04	0.48	1.27	0.65 – 2.47	0.48
71 and above	2.00	0.67 – 5.94	0.06	0.77	0.56 – 0.98	0.00
Education						
No formal	1.00			1.00		
Primary	0.68	0.30 – 1.52	0.14	1.88	0.82 – 4.31	0.14
Secondary	1.31	0.57 – 3.02	0.74	1.15	0.50 – 2.63	0.74
Tertiary	1.10	1.05 – 1.45	0.01	1.42	0.64 – 3.19	0.39
Employment						
Employed	1.00			1.00		
Self-Employed	0.89	0.44 – 1.80	0.34	1.44	0.68 – 3.05	0.34
Unemployed	0.84	0.42 – 1.70	0.41	1.35	0.66 – 2.78	0.41
Monthly Income						
<30,000	1.00			1.00		
30,000 – 100,000	0.56	0.28 – 1.14	0.51	1.26	0.64 – 2.50	0.50
Above 100,000	0.64	0.32 – 1.28	0.98	1.01	0.50 – 2.04	0.98
Number of Children						
0 – 2	1.00			1.00		
3 – 4	1.14	0.58 – 2.25	0.22	0.66	0.34 – 1.27	0.22
5 and above	1.06	0.53 – 2.11	0.63	0.84	0.41 – 1.70	0.63
Visit Status						
First Time	1.00			1.00		
Repeat Visit	0.84	0.48 – 0.98	0.00	0.80	0.59 – 0.93	0.02
Patient Status						
Employee/Staff	1.00			1.00		
Independent	1.05	0.46 – 2.41	0.63	1.21	0.55 – 2.64	0.63
Staff dependent	1.02	0.47 – 2.22	0.35	1.48	0.65 – 3.35	0.35
Student	1.04	0.46 – 2.37	0.43	1.37	0.63 – 2.97	0.43
Payment Method						
HMO/Insurance	1.00			1.00		
Out-of-pocket	1.24	0.70 – 2.19	0.01	1.24	1.11 – 1.62	0.03
Total waiting time	1.02	1.01 – 1.08	0.03	1.01	1.01 – 2.12	0.01

compared to younger patients, contrasting with the findings of [29], who found that older females reported higher "comfortable waiting times" than younger males. In public hospitals Older patients were more satisfied reinforcing the results from this study. Higher education improved satisfaction only in public hospitals, echoing [7], who observed that education influence waiting time and expectations indirectly influencing satisfaction. In contrast employment and income levels showed no significant relationship with satisfaction.

Repeat visits consistently reduced satisfaction in both hospital types, suggesting cumulative frustration from recurring delays, a pattern supported by [16]. Payment method also mattered in both public and private hospitals. Out-of-pocket payers in both sectors reported higher satisfaction, likely because direct payment reduces bureaucratic barriers and reinforces the perceived value of care [19, 22]. Waiting time was a major predictor of outpatient satisfaction in both public and private hospitals, with its influence appearing slightly stronger in public facilities. Evidence from previous studies such as [6, 7, 14, 21] consistently show that longer waiting time reduces satisfaction levels.

Overall, these findings show that although various determinants shape satisfaction in subtle ways, waiting time and payment method remain the most consistent drivers of patient experience. Although long waiting times generally lower satisfaction, some patients reported satisfaction in public hospitals despite longer waiting times highlighting the role of facility setting and patient expectations in shaping satisfaction outcomes. This suggests that improving satisfaction in PHALGA hospitals requires not only reducing waiting time but also improving service efficiency through better staff distribution, scheduling practices and workflow management

5. Conclusion

The study findings show that outpatient satisfaction in hospitals is influenced not only by waiting time, but is also modified by age, education, visit status and payment method. Differences observed between public and private hospitals further indicate that patient expectations and perceived value of care play an important role in reducing dissatisfaction. These results indicate the need for hospital managers and policymakers to move beyond reducing waiting time alone but also adopt patient-centred service strategies that improve overall care experience.

Article Information

Consent and Ethical Approval: Permission and ethical clearance RSHMB/RSHREC/2024/095 for this study was gotten from Rivers State Health Ethics Committee and informed consent was secured from all participants.

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Conflict of Interest: The authors declare no conflict of interest regarding the publication of this paper.

Disclaimer (Artificial Intelligence): The author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.), and text-to-image generators have been used during writing or editing of manuscripts.

Competing Interests: Authors have declared that no competing interests exist.

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