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EFFECTS OF WAITING TIMES ON PATIENT EXPERIENCE AND HEALTH OUTCOMES IN A NIGERIAN OUTPATIENT SETTING: IMPLICATIONS FOR ONE HEALTH SYSTEM EFFICIENCY

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Abstract

Prolonged outpatient waiting times represent a health system stressor that undermines One Health objectives by affecting patient well-being, healthcare delivery efficiency, and the safety of care environments. Patient satisfaction critically reflects healthcare quality, with waiting time emerging as a significant determinant. This cross-sectional study examined waiting time causes and their impact on patient satisfaction and health outcomes at General Hospital Minna's Outpatient Department, Niger State. Using validated questionnaires, 98 adult patients (response rate 81.7%) were surveyed through simple random sampling. Results revealed alarming waiting times: 87.8% of patients experienced waits exceeding expectations, with 27.6% waiting over two hours—far exceeding the recommended 30-minute standard. Patients predominantly attributed delays to excessive patient volume (M=3.85) rather than administrative inefficiencies (M=2.13), reflecting Nigeria's overburdened public healthcare system. Correlation analysis demonstrated a statistically significant negative relationship between waiting time and patient satisfaction ($r=-.368$, $p<0.001$), with regression analysis showing each waiting time unit increase decreased satisfaction scores by 1.367 units ($p=0.002$). Unexpectedly, longer waiting times correlated with reduced stress levels ($r=-.230$, $p=0.022$), possibly indicating patient adaptation to systemic delays or relief upon receiving care. However, waiting time did not significantly affect perceived health outcomes ($p=0.621$) or treatment adherence willingness ($p=0.783$), suggesting sustained trust in healthcare quality despite delays. The findings underscore a critical healthcare capacity crisis where demand overwhelms resources, necessitating fundamental reassessment of patient volume management and resource allocation in resource-constrained settings within a One Health framework.

Keywords: Patient waiting time, causes, satisfaction, health outcome, general out-patient department.

Introduction

Patient satisfaction represents a fundamental metric for evaluating healthcare quality and serves as a critical indicator of patient-centered care delivery in modern medical facilities (Batbaatar et al., 2017). Beyond being a desirable outcome, patient satisfaction significantly influences treatment adherence, health outcomes, and continuity of care, with satisfied patients demonstrating higher compliance rates and stronger engagement with healthcare providers (Al-Abri & Al-Balushi, 2014). The Outpatient Department (OPD) functions as the primary point of contact between patients and healthcare systems, where first impressions are established and often determine patients' overall perceptions of care quality and institutional effectiveness (Zahid et al., 2018).

Multiple factors influence patient satisfaction in outpatient settings, including provider communication, facility environment, accessibility of services, and organizational efficiency (Prakash, 2010). However, waiting time has consistently emerged as one of the most significant determinants of patient satisfaction across diverse healthcare contexts (Bleustein et al., 2014). Patient waiting time in the General Outpatient Department (GOPD) can be defined as the duration from when a patient enters the facility to when they are seen by a physician (Dinesh *et al.,* 2013). This temporal aspect of healthcare delivery represents a tangible indicator of service quality that patients readily use to evaluate healthcare providers, sometimes even more than their clinical knowledge and skills.

Prolonged outpatient waiting times represent a health system stressor that undermines One Health objectives by affecting patient well-being, healthcare delivery efficiency, and the safety of care environments. A robust body of literature demonstrates an inverse relationship between waiting time and patient satisfaction across both high-income and low-and-middle-income countries (Xie & Or, 2017). The Institute of Medicine established that waiting times should ideally not exceed 30 minutes for scheduled appointments (Institute of Medicine, 2001), yet many healthcare facilities, particularly in developing nations including Nigeria, struggle to meet this standard due to weak health systems, inadequate healthcare workers, and the absence of time-specific appointment systems (Ajayi 2002; Ogunfowokan & Mora 2012). For example, the mean patient waiting time in an outpatient department from entry to exit point in two teaching hospitals in north-western Nigeria are about 120 minutes in Zaria (Ameh, Sabo, & Oyefabi, 2013), 168 minute in a teaching hospital in Sokoto (Oche & Adamu, 2013), and 73 minutes in a university college hospital in Ibadan Southwest, Nigeria (Bamgboye, Erinoso, & Ogunlesi, 1992). Prolonged waiting times not only reflect inefficient resource utilization and suboptimal workflow management (Michael et al., 2013) but also contribute to patient anxiety, frustration, and stress, potentially exacerbating existing health conditions (Kreitz et al., 2016). Evidence indicates that waiting times exceeding 30 minutes correlate with substantial patient dissatisfaction and reduced likelihood of return visits, thereby compromising continuity of care and overall health service utilization (Dansky & Miles, 1997; Sun et al., 2017). Prolonged outpatient waiting times represent a health system stressor that undermines One Health objectives by affecting patient well-being, healthcare delivery efficiency, and the safety of care environments. This multi-dimensional impact extends beyond individual patient experiences to encompass broader

public health concerns, including the potential for disease transmission in overcrowded waiting areas and the strain on healthcare workforce morale and productivity.

The relationship between waiting time and patient satisfaction is particularly critical in resource-constrained settings where patients typically arrive early to outpatient clinics and wait considerable periods before consultation (Febres & Mercado 2020). As patient satisfaction rates serve as quality indicators with many healthcare systems targeting satisfaction levels of 90% according to minimum service standards. Understanding this relationship becomes essential for healthcare planning and delivery. Therefore, it remains crucial that healthcare planners and providers implement necessary measures to reduce waiting times to the barest minimum.
This study was aimed to examine the causes of long waiting time and its effect on patient satisfaction and health outcomes at the General Outpatient Department (GOPD) of General Hospital Minna, Niger State.

Methodology

Research Design

A quantitative descriptive approach with a cross-sectional design was employed for this investigation.

Study Setting

The research was carried out in the General Outpatient Department at General Hospital Minna, located in Niger State.

Study Population

The study population comprised adult patients (18 years and older) attending follow-up appointments at the General Outpatient Department.

Eligibility Criteria

Inclusion Criteria: Adult patients (minimum age 18) who were present at the GOPD during the data collection period and provided informed consent were eligible for participation.

Exclusion Criteria: Individuals under 18 years, those in critical condition, and anyone declining to participate were not included in the study.

Sample Size Determination

The number of participants was determined to be 120 patients using Taro Yamane's formula.

Sampling Technique

A simple random selection method was implemented to choose participants, ensuring every eligible individual had an equal probability of inclusion

Data Collection Instrument

Data collection utilized a quantitative method involving pre-validated, self-completion questionnaires in English. The instruments were designed to gather demographic information, patients' experiences regarding wait times, their overall satisfaction with medical services, and their views on factors contributing to extended waiting periods.

Data Collection Procedure

The questionnaires were distributed in the waiting room to eligible participants who provided informed consent.

Data Analysis

The collected information was entered into SPSS version 29 for statistical analysis. Mean values, correlation analysis, and regression analysis were applied to interpret the findings.

Ethical Consideration

Approval to carry out the study was obtained from the Research, Ethics and Publication Committee (REPC) of General Hospital Minna (**Reference Number:** HMB/GHM/136/VOL.III/698, **Date:** 28th May, 2025) in order to carry out the study at the facility. Also, consent form containing all the information about the study was presented to each participant in other to gain their approval for participating in the study.

Results

Socio-demographic characteristics

Table 3.1 summarizes the socio-demographic characteristics of the study participants. A total of 120 individuals including healthcare staff and patients were approached, of whom 98 provided informed consent and completed the questionnaires, resulting in a response rate of 81.7%.

The sample reflected diverse age distribution, with the largest proportion (38.0%) aged 31–45 years, followed by participants aged 18–30 years (31.5%) and 46–60 years (29.6%). Only 0.9% were aged 61 years and above. Females constituted the majority of respondents (61.1%), while males represented 38.9%.

Most participants were married (85.2%), with single individuals making up 14.8%. Educational attainment was generally high, as 59.2% had completed tertiary education. However, the sample also included respondents with no formal education (6.1%) and those with only primary education (11.2%).

Regarding employment status, 46.9% of respondents were employed, 36.7% were unemployed, 4.1% were retired, and 12.2% identified as students.

Table 3.1 Socio-demographic Data of Respondents

	Frequency	Percentage
Age		
18-30	34	31.5
31-45	41	38.0
46-60	32	29.6
61 above	1	0.9
Gender		
Male	42	38.9
Female	66	61.1
Marital status		
Single	16	14.8
Married	92	85.2
Education		
None	6	6.1
primary	11	11.2
secondary	23	23.5
tertiary	58	59.2
Employment status		
Employed	46	46.9
unemployed	36	36.7
retired	4	4.1
student	12	12.2
Total	**98**	**100**

The findings presented in Table 3.2 offer insight into patients' views on the major drivers of prolonged waiting times in the outpatient department. Among all assessed factors, excessive patient load was rated highest (M = 3.85), indicating that most respondents believe overcrowding plays a central role in extending wait times. In comparison, administrative inefficiencies received the lowest mean score (M = 2.13), suggesting that patients perceive administrative processes as having little influence on delays.

Additionally, factors such as limited facilities and equipment (M = 2.21), delays in laboratory procedures (M = 2.32), and case complexity (M = 2.33) were not considered major contributors. Moderate perceptions were noted for staff punctuality (M = 2.54) and insufficient staffing (M = 2.75), indicating that while these issues are acknowledged, they are viewed as less impactful than overall patient volume.

Table 3.2: Measurement of Perceived Causes of Long Waiting Time at GOPD of General Hospital, Minna, Niger State.

Variables		SA	A	N	D	SD	Sum	Mean	Interpretation
	Freq. (f)	**5**	**4**	**3**	**2**	**1**			
Too many patients	**Mark (x)**	29	54	12	6	7	108		
	F(x)	145	216	36	12	7	416	3.85	**Good**

Staff running late	**Mark (x)**	8	11	32	37	20	108		
	F(x)	40	44	96	74	20	274	2.54	**Fair**
Complex cases	**Mark(x)**	3	9	37	31	28	108		
	F(x)	15	36	111	62	28	252	2.33	**Poor**
Admin delay	**Mark(x)**	1	12	14	54	27	108		
	F(x)	5	48	42	108	27	230	2.13	**Poor**
Inadequate room/equipment	**Mark(x)**	1	6	29	51	21	108		
	F(x)	5	24	87	102	21	239	2.21	**Poor**
Staff shortage	**Mark (x)**	11	20	21	43	13	108		
	F(x)	55	80	63	86	13	297	2.75	**Fair**
Laboratory delay	**Mark(x)**	5	21	13	34	35	108		
	F(x)	25	84	39	68	35	245	2.32	**Poor**

Correlation analysis in table 3.3 revealed a statistically significant negative correlation between average appointment waiting time and overall patient satisfaction ($r = -.368$, $p < 0.001$). This weak inverse relationship suggests that longer waiting times are associated with decreased patient satisfaction levels. The correlation achieved statistical significance at the $p < 0.01$ threshold, indicating that the observed relationship is unlikely to have occurred by chance.

Table 3.3: Correlation Analysis of Waiting Time and Patient Satisfaction

			Total satisfaction score
Spearman's rho	On average, how long do you wait for your appointment to begin	Pearson Correlation	-.368
		Sig. (2-tailed)	<0.001
		N	98

Correlation is significant at the 0.01 level (2-tailed).

Table 3.4 shows the regression analysis with a significant intercept value of 34.164 ($p < 0.001$), representing the predicted satisfaction score when waiting time equals zero. The

unstandardized coefficient for waiting time was -1.367, demonstrating a negative relationship whereby each unit increase in waiting time corresponded to a decrease of 1.367 units in satisfaction score.

Table 3.4: Regression Analysis of Waiting Time and Patient Satisfaction

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	34.164	1.660		20.584	<0.001
On average, how long do you wait for your appointment to begin	-1.367	.425	-.311	-3.212	0.002

a. Dependent Variable: Total_Satisfaction_Score

The correlation analysis presented in Table 3.5 revealed a statistically significant negative relationship between waiting time and stress or anxiety levels ($r = -.230$, $p = 0.022$), suggesting that extended waiting periods were associated with modest reductions in patient stress or anxiety. In contrast, the relationships between waiting time and both impact on health condition ($r = 0.621$) and willingness to follow instructions ($r = 0.783$) did not reach statistical significance ($p > .05$).

Table 3.5: Correlation Analysis of Waiting Time and Health Outcome

		On average, how long do you wait for your appointment to begin
Did the waiting time increase your level of stress or anxiety	Pearson Correlation	-0.230
	Sig. (2-tailed)	0.022
	N	98
Do you believe the waiting time had any impact on your health condition or the outcome of your visit today	Pearson Correlation	-0.051
	Sig. (2-tailed)	0.621
	N	98
Did the waiting time affect your willingness to follow the healthcare provider's instructions or recommendations	Pearson Correlation	0.028
	Sig. (2-tailed)	0.783
	N	98

Correlation is significant at the 0.05 level (2-tailed).

Discussion

The importance of waiting time extends beyond mere inconvenience; it fundamentally shapes patient perceptions of healthcare quality and influences critical health-seeking behaviors. Research has consistently demonstrated that prolonged waiting periods contribute to patient dissatisfaction, reduced adherence to treatment recommendations, decreased likelihood of returning for follow-up care, and erosion of trust in healthcare systems (Anderson et al., 2007; Dansky & Miles, 1997). In developing countries, where healthcare infrastructure often struggles to meet population needs, waiting time assumes even greater significance as a barrier to healthcare access and a determinant of health equity. In Nigeria, the challenge of extended waiting times in public healthcare facilities has been extensively documented, with numerous studies identifying it as among the most frequently cited complaints by patients seeking care at public hospitals (Iliyasu et al., 2010; Oyekale, 2017). The Nigerian healthcare system faces a confluence of challenges including inadequate infrastructure, healthcare workforce shortages, high patient volumes, and limited financial resources, all of which converge to create prolonged waiting periods that test patient tolerance and compromise service delivery quality (Adeloye et al., 2017).

The alarming prevalence of extended waiting times observed in this study corroborates earlier studies conducted in Nigerian tertiary healthcare facilities, where prolonged waiting times have been consistently identified as a major source of patient dissatisfaction (Oyekale, 2017; Balogun & Esther, 2019). The waiting periods documented significantly exceed internationally recommended benchmarks for outpatient services, where standards typically suggest maximum waiting times of 30 minutes for scheduled appointments (Ogunfowokan & Mora, 2012). Research conducted at the University College Hospital, Ibadan similarly documented excessive waiting times, with patients reporting average waits of 2-3 hours for consultations (Ibirongbe & Eshofonie, 2019). Supporting these findings, a related study at Ibrahim Badamasi Babangida specialist hospital found respondents waited greater than 2 hours before consultation, with the majority of patients experiencing prolonged waiting particularly in the consultation phase (Abdulsalam & Khan, 2020). The consistency of these findings across multiple Nigerian healthcare facilities suggests a systemic challenge that transcends individual institutional failings and reflects broader structural weaknesses in the nation's healthcare delivery system.

The findings reveals excessive patient volume as the predominant factor contributing to extended waiting times, reflecting the reality of Nigeria's overburdened public healthcare system, where high patient-to-provider ratios are endemic (Adeloye et al., 2017). The pressure on public facilities has intensified due to limited access to private healthcare alternatives for most Nigerians, resulting in concentrated demand at public hospitals. Interestingly, patients did not strongly attribute delays to administrative inefficiencies, insufficient facilities and equipment, laboratory delays, or case complexity. This pattern of attribution suggests that patients may have limited visibility into backend operational processes or may normalize these deficiencies as inherent features of public healthcare. However, studies examining healthcare operations in Nigeria have consistently identified administrative bottlenecks, inadequate infrastructure, and equipment shortages as significant contributors to service delays (Ofili & Ofovwe, 2005; Erah & Nwazuoke, 2002). The disconnect between patient perceptions and operational realities highlights the

challenge of identifying root causes of delays when patients primarily experience the most visible symptoms of overcrowding and queues rather than the underlying systemic issues. Staff punctuality issues and staffing levels received moderate recognition as contributing factors. The perception of adequate staffing despite long waits may reflect patient understanding that available staff are overwhelmed by patient volume rather than being numerically insufficient. This interpretation aligns with research on healthcare workforce distribution in Nigeria, where urban tertiary facilities may have reasonable staff numbers but face challenges with workload distribution and efficiency (Labiran et al., 2008).

The observed negative relationship between waiting time and patient satisfaction demonstrates the pervasive influence of waiting times on patient experience, with the strength of this relationship quantifying the substantial impact even moderate increases in waiting time can have on overall satisfaction levels. These findings are consistent with extensive international literature documenting waiting time as a critical determinant of patient satisfaction (Leddy et al., 2003; Anderson et al., 2007). In the Nigerian context, studies conducted at various healthcare facilities have similarly identified waiting time as among the strongest predictors of patient dissatisfaction with healthcare services (Iliyasu et al., 2010; Owolabi et al., 2013).

Concerning the impact of waiting time on health outcomes, the findings present a more complex picture. The observed inverse relationship between waiting time and stress or anxiety contrasts with the general sentiment and some research on the subject. Prolonged waiting times are widely considered a source of stress and frustration for patients, potentially increasing their anxiety levels (Akande et al., 2014; Nwafor and Agaba, 2018). This finding suggests that for this specific patient population, other factors might be at play, or that the patients have become so accustomed to long waiting times that their initial stress or anxiety subsides over a long wait. This phenomenon may represent a form of psychological adaptation to chronic system inefficiency, where patients develop coping mechanisms or lowered expectations that buffer against acute stress responses.

The absence of significant correlations between waiting time and perceived impact on health condition or adherence to medical advice aligns with some Nigerian studies, but also contradicts others. A study in a general hospital in Nigeria, for instance, found that while timeliness of services did not seem to impact the perception of quality, excessive waiting time could potentially result in poor compliance with instructions (Afolabi and Erhun, 2003). This study's results, however, suggest that for this population, the waiting time does not directly influence their perceived health outcome or their intention to adhere to medical advice. This could indicate a strong trust in the healthcare provider once the consultation finally begins, or a belief that the waiting time, while unpleasant, is a necessary and unavoidable part of the process. Alternatively, this finding may reflect patients' separation of service delivery processes from clinical care quality recognizing that waiting time reflects system constraints rather than provider competence. This resilience in maintaining treatment adherence despite poor waiting experiences represents a positive finding, though it should not excuse system inadequacies or diminish the urgency of addressing excessive waiting times.

Conclusion

This research conducted at General Hospital Minna's outpatient department reveals excessive waiting times exceeding international standards, primarily attributed by patients to overcrowding rather than administrative failures. The research confirms that prolonged waiting consistently diminishes patient satisfaction. Unexpectedly, longer waits correlated with reduced stress levels, possibly reflecting relief upon receiving care or patients have become accustomed to long waits. Crucially, extended waiting times did not undermine trust in care quality or treatment adherence. The findings highlight a critical healthcare dilemma where high demand exceeds capacity. Addressing this requires fundamental reassessment of patient volume versus available resources, reflecting broader challenges of healthcare access, equity, and sustainability in resource-constrained settings.

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