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TIMELINESS OF HEALTHCARE SERVICE DELIVERY AND CLIENT SATISFACTION IN NHIS-ACCREDITED HOSPITALS IN MAKURDI, BENUE STATE

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ABSTRACT
This study examined the relationship between timeliness of healthcare service delivery and client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area, Benue State. A descriptive survey research design was adopted. The population of the study consisted of 2,784 NHIS stakeholders drawn from six selected NHIS-accredited hospitals, from which a sample size of 350 respondents was determined using Taro Yamane's formula. A total of 342 valid questionnaires were retrieved and analysed, representing a 97.7% response rate. Data were collected using a structured questionnaire and analysed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (simple linear regression) with the aid of SPSS version 25. The study was anchored on the Expectancy Disconfirmation Theory (Oliver, 1977), which explains that client satisfaction is determined by the comparison between expected service performance and actual healthcare experiences. Findings revealed that prolonged waiting time before consultation, registration and card processing delays, laboratory and diagnostic service delays, and pharmacy and drug dispensing delays significantly reduced client satisfaction among NHIS enrollees. Regression results showed that waiting time before consultation explained 46.5% of the variation in client satisfaction ($R^2 = .465$, $\beta = -.512$, $p < .05$), registration and card processing explained 49.6% ($R^2 = .496$, $\beta = -.536$, $p < .05$), laboratory and diagnostic service delays explained 45.0% ($R^2 = .450$, $\beta = -.489$, $p < .05$), while pharmacy and drug dispensing delays explained 51.7% ($R^2 = .517$, $\beta = -.558$, $p < .05$). The study concludes that delays across major healthcare service points remain significant barriers to achieving satisfactory NHIS service experiences in Makurdi. It recommends that hospital management and NHIA authorities should strengthen digital patient processing systems, improve workflow management, and enhance staffing and operational efficiency in consultation, laboratory, and pharmacy units to reduce waiting time and improve client satisfaction.

Keywords: Timeliness of healthcare delivery; Client satisfaction; NHIS; Waiting time; Healthcare service quality; Makurdi

Introduction

Timeliness of healthcare service delivery is a fundamental indicator of health system performance and an important determinant of patient satisfaction. Delays in accessing healthcare services, particularly in outpatient departments, have been widely identified as a major challenge affecting the quality of care in both developed and developing countries. Although clinical outcomes remain important, patients increasingly evaluate healthcare quality based on service providers' responsiveness, including the time they wait before receiving treatment. Empirical evidence consistently demonstrates that prolonged waiting times reduce patients' perceptions of service quality and overall satisfaction (Andaleeb, 2001; Sun et al., 2017). Likewise, Nguyen et al. (2020) found that excessive outpatient waiting times significantly reduced patients' willingness to revisit healthcare facilities, particularly public hospitals where demand frequently exceeds available resources. Across sub-Saharan Africa, shortages of healthcare personnel, inadequate infrastructure, and inefficient patient flow systems continue to contribute to delays in service delivery and lower levels of patient-centred care (Afolabi et al., 2019; Mohammed et al., 2020).

In Nigeria, timely healthcare delivery remains a persistent concern, particularly within public hospitals and facilities accredited under the National Health Insurance Scheme (NHIS). Although the NHIS was established to improve access to quality healthcare services, beneficiaries continue to report delays during registration, consultation, laboratory investigations, and pharmacy services (Oche & Adamu, 2013; Akinyinka et al., 2019). Operational challenges, including inadequate staffing, weak information management systems, and diagnostic delays, have limited the Scheme's ability to provide prompt services. Consequently, studies have shown that prolonged waiting times significantly reduce patient satisfaction, trust in healthcare providers, and willingness to continue using NHIS-accredited facilities (Ojo et al., 2014; Iloh et al., 2019).

These challenges are also evident in Benue State, particularly among NHIS-accredited hospitals in Makurdi, where increasing patient enrolment continues to place pressure on available healthcare resources. Studies conducted in comparable tertiary hospitals in North-Central Nigeria have reported substantial delays at registration, consultation, and pharmacy units, with these bottlenecks contributing to patient congestion and lower perceptions of service quality. Idowu, Adeyemi, and Oladipo (2017) reported that waiting times varied significantly across service points, with registration, consultation, and pharmacy services accounting for the longest delays and negatively influencing patients' assessment of healthcare efficiency. Similarly, Atinga, Abor, and Anim (2011) found that the timeliness of care was a significant predictor of patient satisfaction, as delays in accessing services at medical records, consultation, and pharmacy units adversely affected patients' overall evaluation of healthcare quality. These findings underscore the importance of timely healthcare service delivery as a critical determinant of client satisfaction and provide a strong basis for examining this relationship among NHIS enrollees in accredited hospitals in Makurdi Local Government Area, Benue State.

Statement of the Problem

Timeliness of healthcare service delivery remains a critical component of effective health system performance and a major determinant of client satisfaction. Despite various reforms aimed at improving healthcare delivery in Nigeria, including the introduction of the National Health Insurance Scheme (NHIS), delays in accessing healthcare services continue to be a recurring challenge in many public and accredited health facilities. Patients often experience prolonged waiting times at key service points such as registration, consultation, laboratory investigations, and pharmacy services. These delays not only affect the efficiency of service delivery but also influence patients' perception of the quality of care received, even when clinical services are eventually provided.

In many NHIS-accredited hospitals, the expectation is that insured patients should receive faster and more streamlined services compared to out-of-pocket users. However, this expectation is often not met in practice, as patients still experience significant delays before receiving medical attention. In Makurdi, the capital of Benue State, NHIS-accredited hospitals continue to serve a large and growing population drawn from both urban and rural communities, placing additional pressure on existing healthcare facilities and contributing to longer waiting times across various service points.

Although previous studies have examined patient satisfaction and healthcare service delivery in Nigeria and other health systems (Nguyen et al., 2020; Jenkinson et al., 2017; Ogaji & Mezie-Okoye, 2017), limited attention has been given to the specific relationship between timeliness of healthcare service delivery and client satisfaction among NHIS enrollees in accredited hospitals in Makurdi Local Government Area of Benue State. Most existing studies have assessed healthcare quality using broad service quality indicators without specifically examining waiting time as an independent determinant of client satisfaction in an NHIS context. Consequently, there is limited empirical evidence on how delays at different service points influence the satisfaction of NHIS beneficiaries in the study area. This study therefore seeks to fill this gap by examining the relationship between timeliness of healthcare service delivery and client satisfaction among NHIS enrollees in accredited hospitals in Makurdi Local Government Area, Benue State.

Objective of the study

The main objective of this study is to examine the timeliness of healthcare service delivery and its relationship with client satisfaction in NHIS-accredited hospitals in Makurdi. The specific objectives are to:

i. Assess patients' waiting time before consultation in NHIS-accredited hospitals in Makurdi.
ii. Examine the waiting time for registration and card processing in NHIS-accredited hospitals in Makurdi.
iii. Determine the waiting time for laboratory and diagnostic services in NHIS-accredited hospitals in Makurdi.
iv. Assess the waiting time for pharmacy and drug dispensing services in NHIS-accredited hospitals in Makurdi.

Research Questions

The following research questions guided the study:

i. How does patients' waiting time before consultation influence client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area?
ii. How does patients' waiting time for registration and card processing influence client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area?
iii. How does patients' waiting time for laboratory and diagnostic services influence client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area?
iv. How does patients' waiting time for pharmacy and drug dispensing services influence client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area?

Hypotheses

i. H_{01}: Patients' waiting time before consultation has no significant influence on client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area.
ii. H_{02}: Patients' waiting time for registration and card processing has no significant influence on client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area.
iii. H_{03}: Patients' waiting time for laboratory and diagnostic services has no significant influence on client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area.

iv. H_{04}: Patients' waiting time for pharmacy and drug dispensing services has no significant influence on client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area.

Conceptual Clarifications

National Health Insurance Scheme

The National Health Insurance Scheme (NHIS) is widely conceptualized in contemporary health systems literature as a social health financing mechanism designed to ensure financial protection and equitable access to healthcare services through prepayment and pooled contributions. According to McIntyre and Kutzin (2016), health insurance systems are central instruments of universal health coverage, aimed at reducing direct out-of-pocket payments at the point of service while improving access to essential healthcare services. In a similar view, Wagstaff et al. (2020) explain health insurance schemes as policy tools that enhance financial risk protection and promote equity in healthcare utilization by distributing healthcare costs across populations through mandatory or subsidized contributions. These definitions emphasize financial protection, equity, and improved access as the core objectives of health insurance systems globally.

The World Health Organization (2021) describes national health insurance systems as mechanisms through which countries ensure that individuals and communities receive needed health services without suffering financial hardship. In Nigeria specifically, the National Health Insurance Authority (NHIA, 2022) defines the scheme as a compulsory social health insurance system established to provide financial risk protection and improve access to quality healthcare services for all Nigerians through accredited healthcare providers. Similarly, Onoka et al. (2017) describe NHIS in Nigeria as a healthcare financing strategy intended to reduce catastrophic health expenditure and improve access to care through risk pooling and provider accreditation systems.

However, critical examination of these definitions reveals conceptual and operational limitations. While global definitions by McIntyre and Kutzin (2016) and Wagstaff et al. (2020) emphasize financial protection and equity, they do not sufficiently address service delivery performance indicators such as timeliness, efficiency, and patient flow management within accredited facilities. Similarly, the WHO (2021) and NHIA (2022) definitions focus largely on access and financial risk protection, but provide limited attention to how healthcare is experienced by patients in real time, particularly in terms of waiting time and responsiveness. Even Onoka et al. (2017), while addressing healthcare financing and access in Nigeria, give limited analytical attention to service delivery delays that shape patient satisfaction within NHIS facilities.

Timeliness

Timeliness of healthcare service delivery is widely recognized in healthcare literature as a core dimension of service quality that reflects the speed and efficiency with which patients receive care across different stages of the healthcare process. It is generally defined as the degree to which healthcare services are provided within an appropriate time frame without avoidable delay. According to the Institute of Medicine (2001), timeliness is one of the key domains of healthcare quality and refers to reducing waits and sometimes harmful delays for both those who receive and those who give care. This definition emphasizes that delays in healthcare can negatively affect outcomes, patient experience, and overall system performance. In a similar perspective, Kelley and Hurst (2006) define timeliness as the ability of health systems to provide care in a prompt manner that meets patients' needs without unnecessary waiting periods, highlighting its importance in ensuring effective service delivery.

Bleustein et al. (2014) further conceptualize timeliness from a patient-centered perspective, describing it as the time interval between a patient's arrival at a healthcare facility and the receipt of medical attention, noting that prolonged waiting time is one of the strongest

predictors of dissatisfaction in healthcare settings. Saghafian et al. (2014) also define timeliness in operational terms as the efficiency of patient flow through healthcare systems, emphasizing reduction of bottlenecks across registration, consultation, diagnosis, and treatment processes. In addition, Campbell et al. (2016) situate timeliness within the broader framework of health system responsiveness, explaining it as the ability of healthcare systems to respond promptly to patient needs as part of delivering people-centered care. Similarly, Sriram and Hyder (2019) describe timeliness as a performance indicator of healthcare systems that reflects how efficiently services are delivered without unnecessary delay, particularly in resource-constrained environments.

However, critical analysis of these definitions shows variation in emphasis across different scholars. While the Institute of Medicine (2001) focuses on timeliness as a quality standard linked to patient safety and outcomes, Kelley and Hurst (2006) emphasize system responsiveness and service delivery efficiency. Bleustein et al. (2014) focus more on patient experience and satisfaction, whereas Saghafian et al. (2014) concentrate on operational flow and system bottlenecks within healthcare delivery. Campbell et al. (2016) expand the concept further by linking timeliness to overall health system responsiveness and people-centered care. These varying perspectives indicate that timeliness is a multidimensional concept encompassing speed of service delivery, system efficiency, and patient experience.

Client Satisfaction

Client satisfaction is a central concept in healthcare delivery and refers to the extent to which patients' expectations of health services are met or exceeded by the actual care received. It reflects patients' subjective evaluation of healthcare experiences, particularly in terms of service quality, provider interaction, and responsiveness. In the Nigerian context, Ojo et al. (2014) describe patient satisfaction as an important outcome measure of healthcare delivery that captures patients' perception of how well health services meet their needs and expectations. Similarly, Iloh et al. (2019) explain patient satisfaction as a multidimensional construct influenced by both clinical outcomes and non-clinical factors such as waiting time, staff attitude, and accessibility of services in health facilities.

Akinyinka et al. (2019) note that patient satisfaction in Nigerian hospitals is significantly shaped by the responsiveness of healthcare providers, particularly the speed of service at key points such as registration, consultation, and pharmacy units. In the same vein, Oche and Adamu (2013) found that prolonged waiting time negatively affects patient satisfaction in outpatient departments, as delays reduce patients' confidence in the efficiency of healthcare services and increase dissatisfaction with care received. These findings highlight that both structural and process-related factors play a major role in shaping patient satisfaction in Nigerian healthcare facilities.

From a broader health system perspective, Adesanya et al. (2012) argue that patient satisfaction is an essential indicator of healthcare performance in developing countries, as it reflects both the quality and accessibility of services provided. They further emphasize that responsiveness, including timeliness of care, is a critical determinant of how patients evaluate healthcare systems. Similarly, Uzochukwu et al. (2015) highlight that in Nigeria, patient satisfaction is closely associated with perceived improvements in service delivery, particularly in relation to reduced waiting time and improved provider-patient communication. These studies suggest that satisfaction is not only outcome-based but also process-driven.

However, critical examination of these local studies shows that while Oche and Adamu (2013) focus primarily on waiting time as a determinant of satisfaction, Akinyinka et al. (2019) and Iloh et al. (2019) adopt a broader view that includes both clinical and non-clinical factors influencing patient experience. Adesanya et al. (2012) and Uzochukwu et al. (2015) further extend the concept by linking satisfaction to overall health system responsiveness and performance. These variations indicate that client satisfaction is a multidimensional concept

influenced by service efficiency, provider attitude, accessibility, and patient expectations within healthcare settings.

In synthesis, client satisfaction in healthcare refers to patients' overall assessment of the quality of care received based on their expectations and actual experiences, particularly in relation to responsiveness, service efficiency, and provider interaction. In this study, client satisfaction is understood in terms of patients' perceptions of waiting time, service delivery efficiency, provider attitude, and overall experience in NHIS-accredited hospitals in Makurdi.

Service delivery

Service delivery in healthcare refers to the organized process through which health services are provided to patients in a manner that ensures accessibility, efficiency, and quality of care. It involves the coordinated use of human, material, and institutional resources to deliver preventive, curative, and rehabilitative services to individuals and communities. According to Adesanya et al. (2012), healthcare service delivery is the actual provision of essential health services through functional health systems designed to meet population needs effectively. This definition highlights the importance of system organization and resource availability in ensuring effective healthcare delivery. Similarly, Uzochukwu et al. (2015) describe service delivery as the execution of healthcare services within health facilities, involving clinical and administrative processes that determine how efficiently patients receive care.

Service delivery is often assessed in relation to how patients move through different stages of care within health facilities. Oche and Adamu (2013) explain that effective healthcare service delivery is reflected in the efficiency of outpatient services, particularly the reduction of waiting time at registration, consultation, and treatment points. They note that delays in these areas negatively affect the overall efficiency of healthcare systems. In the same direction, Iloh et al. (2019) emphasize that service delivery in hospitals is influenced by both structural factors such as staffing levels and infrastructural availability, and operational factors such as patient flow management and service organization.

Akinyinka et al. (2019) further argue that healthcare service delivery in developing health systems is often constrained by inadequate manpower, limited infrastructure, and inefficient administrative procedures, which collectively slow down the provision of services. They note that even where health insurance schemes exist, inefficiencies in implementation continue to affect the speed and quality of care delivered to patients. Similarly, Adesanya et al. (2012) observe that service delivery in many low and middle-income countries is challenged by high patient load and limited resources, leading to congestion and delays in healthcare facilities.

However, critical analysis of these studies shows variation in focus. While Oche and Adamu (2013) concentrate on waiting time as a key indicator of service efficiency, Iloh et al. (2019) and Akinyinka et al. (2019) provide a broader view that includes structural and administrative constraints affecting service delivery. Adesanya et al. (2012) and Uzochukwu et al. (2015) emphasize system-level organization and execution of services. These differences indicate that healthcare service delivery is a multidimensional concept influenced by efficiency of processes, availability of resources, and effectiveness of administrative systems.

In synthesis, healthcare service delivery refers to the coordinated provision of health services aimed at ensuring that patients receive timely and efficient care through well-organized health systems. In this study, service delivery is considered in terms of patient flow, efficiency of service points, availability of healthcare workers, and responsiveness of health facilities.

Theoretical Framework

The Expectancy Disconfirmation Theory (EDT) was developed by Richard L. Oliver (1980) as a framework for explaining customer satisfaction based on the comparison between expected and actual service performance. The theory was further elaborated in Oliver's later

work on consumer satisfaction and service quality (Oliver, 1997). It explains that satisfaction is formed when individuals compare their prior expectations of a service with their experience after using the service.The basic assumption of the theory is that individuals enter a service environment with certain expectations about how they should be treated and the quality of service they should receive. In healthcare settings, patients expect timely attention, efficient service delivery, and responsive care. After receiving care, they evaluate the actual performance of the health system, including waiting time, consultation speed, availability of services, and staff responsiveness. According to Oliver (1980, 1997), satisfaction occurs when actual performance meets or exceeds expectations, a situation referred to as positive disconfirmation. However, when actual service falls below expectations, such as experiencing long waiting times or delays in treatment, negative disconfirmation occurs, leading to dissatisfaction. The theory therefore assumes that patient satisfaction is a cognitive comparison process between expectations and actual service experience.

Despite its usefulness, the Expectancy Disconfirmation Theory has been criticized on several grounds. One major criticism is that it is highly subjective because expectations vary significantly among individuals, making them difficult to measure consistently. Another limitation is that the theory focuses mainly on cognitive evaluation and tends to overlook emotional, cultural, and situational factors that also influence satisfaction in healthcare settings. It has also been argued that expectations are not always clearly formed before service delivery, as they may change during the care process depending on patient experience. In addition, the theory does not fully account for structural and systemic challenges in healthcare delivery, such as inadequate staffing, long queues, and resource constraints, which may affect service outcomes regardless of expectations.

The Expectancy Disconfirmation Theory is highly relevant to this study because it explains how patients evaluate the timeliness of healthcare service delivery in NHIS-accredited hospitals in Makurdi by comparing their prior expectations with their actual experiences. Patients enrolled under the NHIS generally expect prompt and efficient services, particularly at key service points such as registration, consultation, laboratory investigations, and pharmacy services. When actual service delivery is slower than expected, especially through prolonged waiting time, the perceived gap between expectation and performance results in negative disconfirmation, which leads to dissatisfaction with healthcare services even when clinical care is adequate. Conversely, when services are delivered within or faster than expected time frames, positive disconfirmation occurs, leading to higher levels of client satisfaction. The theory therefore provides a clear framework for understanding how timeliness of healthcare service delivery influences client satisfaction in NHIS-accredited hospitals in Makurdi.

Materials and Methods

The study adopts a descriptive survey research design. The population of this study comprises the main stakeholders involved in the operation, delivery, and oversight of NHIS services in accredited hospitals in Makurdi Local Government Area. These include NHIS users (patients), healthcare personnel, NHIS Desk Officers, and Health Maintenance Organisation (HMO) representatives. Six NHIS accredited hospitals were selected for the study: Federal Medical Centre Makurdi, Benue State University Teaching Hospital Makurdi, Bishop Murray Hospital Makurdi, Madonna Hospital Makurdi, Amazing Grace Hospital Makurdi, and First Fertility Hospital Ltd Makurdi. These hospitals were selected because they represent the major public, private, and faith-based NHIS service providers in the area. The study population is therefore distributed across three major groups: NHIS principal users, healthcare personnel, and NHIS Desk Officers/HMO representatives.

Table 1: Population of NHIS Stakeholders in Selected Hospitals in Makurdi LGA

S/N	Selected Accredited Hospitals	NHIS Principal Heads/Users	Healthcare Personnel	NHIS Desk Officers & HMO Representatives	Total per Hospital
1	Federal Medical Centre, Makurdi	465	410	17	892
2	Benue State University Teaching Hospital (BSUTH), Makurdi	438	385	14	837
3	Bishop Murray Hospital, Makurdi	286	55	7	348
4	Madonna Hospital, Makurdi	254	46	7	307
5	Amazing Grace Hospital, Makurdi	173	37	7	217
6	First Fertility Hospital Ltd., Makurdi	144	33	6	183
	Total	**1,760**	**966**	**58**	**2,784**

Source: NHIA Head Office, Makurdi, 2025; Hospital Records, 2025; NHIS Desk Office, 2025

Considering the population size of 2784, Taro Yamane's formula is used in determining the sample size. The formula is as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample size

N = Population size (2,784)

e = Level of precision (0.05)

Substituting the values:

$$n = \frac{2784}{1 + 2784(0.05)^2}$$

$$n = \frac{2784}{1 + 2784(0.0025)}$$

$$n = \frac{2784}{1 + 6.96}$$

$$n = \frac{2784}{7.96}$$

$$n = 349.75 = 350$$

A multistage sampling technique comprising stratified, purposive, and proportionate sampling techniques was employed. First, NHIS-accredited hospitals in Makurdi were stratified into federal/state, private, and faith-based facilities to ensure adequate representation. Thereafter, six hospitals Federal Medical Centre Makurdi, Benue State University Teaching Hospital Makurdi, Bishop Murray Hospital, Madonna Hospital, Amazing Grace Hospital, and First Fertility Hospital Ltd. were purposively selected because they are major NHIS-accredited healthcare providers with high patient utilisation. Sample of 350 respondents was then proportionately allocated across the selected hospitals based on their respective NHIS enrollee populations, resulting in 112 respondents from Federal Medical Centre Makurdi, 105 from Benue State University Teaching Hospital Makurdi, 44 from Bishop Murray Hospital, 39 from Madonna Hospital, 27 from Amazing Grace Hospital, and 23 from First Fertility Hospital Ltd. Finally, NHIS enrollees who met the inclusion criteria were selected from each hospital for questionnaire administration. Finally, NHIS enrollees who met the inclusion criteria were selected from each hospital for questionnaire

Primary data were collected using a structured questionnaire designed to elicit information on the major dimensions of timeliness of healthcare service delivery, namely waiting time before consultation, registration and card processing, laboratory and diagnostic services, pharmacy and drug dispensing services, as well as respondents' level of client satisfaction. The questionnaire was structured on a five-point Likert scale to enable respondents to indicate the extent of their agreement with each statement. Secondary data were obtained from textbooks, peer-reviewed journal articles, government publications, NHIA reports, policy documents, and other relevant scholarly materials to provide theoretical and empirical support for the study.

The collected data were analysed using both descriptive and inferential statistical techniques with the aid of the Statistical Package for the Social Sciences (SPSS), Version 25. Descriptive statistics, including frequencies, percentages, mean scores, and standard deviations, were used to summarise the socio-demographic characteristics of respondents and answer the research questions. A criterion mean of 3.00 was adopted for decision-making, such that mean scores of 3.00 and above were interpreted as agreement, while mean scores below 3.00 indicated disagreement.

To test the hypotheses, simple linear regression analysis was employed at the 0.05 level of significance. This analytical technique was considered appropriate because each hypothesis examined the influence of a single dimension of timeliness of healthcare service delivery on client satisfaction. Accordingly, four separate regression models were estimated to determine the individual effects of waiting time before consultation, registration and card processing, laboratory and diagnostic services, and pharmacy and drug dispensing services on client satisfaction. The regression models were specified as follows:

Hypothesis One: $CS = \beta_0 + \beta_1 WC + \varepsilon$

Hypothesis Two: $CS = \beta_0 + \beta_1 RP + \varepsilon$

Hypothesis Three: $CS = \beta_0 + \beta_1 LD + \varepsilon$

Hypothesis Four: $CS = \beta_0 + \beta_1 PD + \varepsilon$

Thus, where:

CS = Client Satisfaction

WC = Patients' Waiting Time Before Consultation

RP = Waiting Time for Registration and Card Processing

LD = Waiting Time for Laboratory and Diagnostic Services

PD = Waiting Time for Pharmacy and Drug Dispensing Services

β_0 = Constant (Intercept)

β_1 = Regression Coefficient Measuring the Effect of the Independent Variable on Client Satisfaction

ε = Stochastic Error Term Representing the Influence of Other Factors Not Included in the Regression Model

Data Presentation and Analysis

This chapter presents the analysis, interpretation, and discussion of findings derived from the field survey on timeliness of healthcare service delivery and client satisfaction in NHIS-accredited hospitals in Makurdi Local Government Area, Benue State. Out of the 350 questionnaires administered to respondents, 342 were successfully retrieved and found suitable for analysis, representing a response rate of 97.7%. The remaining 8 questionnaires were either not returned or were improperly completed, representing a non-response rate of 2.3%. Consequently, the analysis was based on the 342 valid questionnaires retrieved from the respondents.

Table 2: Distribution and Response Rate of Administered Questionnaires

S/N	Questionnaire Status	Number of Questionnaires	Percentage (%)
1	Questionnaires administered	350	100.0
2	Questionnaires retrieved and validly completed	342	97.7
3	Questionnaires not returned/invalidly completed	8	2.3
Total		350	100.0

Source: Field Survey, 2026.

Table 3: Socio-Demographic Characteristics of Respondents

Attributes	Frequency (N = 342)	Percentage (%)
Gender		
Male	188	55.0
Female	154	45.0
Age (Years)		
18-30	110	32.1
31-40	133	38.9
41-50	70	20.5
51 Years and Above	29	8.5
Marital Status		
Single	131	38.4
Married	194	56.6
Divorced/Separated	17	5.0
Educational Qualification		
Secondary School Certificate	53	15.5
NCE/Diploma	76	22.1
Bachelor's Degree	148	43.4
Postgraduate Degree	65	19.0
Total	**342**	**100.0**

Source: Field Survey, 2026.

The table above presents the socio-demographic characteristics of the 342 respondents drawn from NHIS-accredited hospitals in Makurdi. The findings show that male respondents constituted 55.0% of the sample, while female respondents accounted for 45.0%, indicating a

fairly balanced representation of both genders among NHIS users. In terms of age distribution, respondents aged 31-40 years formed the largest proportion (38.9%), followed by those aged 18-30 years (32.1%), while respondents aged 41-50 years and 51 years and above accounted for 20.5% and 8.5%, respectively. This suggests that the majority of respondents were within the economically active age group and were likely to be frequent users of healthcare services.

Regarding marital status, married respondents constituted the majority with 56.6%, while single respondents accounted for 38.4%, and divorced or separated respondents represented 5.0%. This indicates that a substantial proportion of respondents were family-oriented individuals who were likely to utilize NHIS services for themselves and their dependents. Concerning educational qualification, the majority of respondents possessed a Bachelor's Degree (43.4%), followed by NCE/Diploma holders (22.1%), Postgraduate Degree holders (19.0%), and Secondary School Certificate holders (15.5%). The educational profile suggests that the respondents possessed adequate literacy and understanding to provide reliable information regarding their experiences with the timeliness of healthcare service delivery and their level of satisfaction with services received in NHIS-accredited hospitals in Makurdi.

Table 4: Assessment of Waiting Time Before Consultation and Client Satisfaction in NHIS-Accredited Hospitals in Makurdi

S/N	Items	SD	D	U	A	SA	Mean	Std. Dev.	Decision
1	Patients spend a long time waiting before seeing a doctor for consultation.	30	42	24	146	100	3.68	1.19	Accepted
2	The waiting time before consultation is generally satisfactory.	116	98	32	58	38	2.43	1.24	Rejected
3	Delays before consultation affect my overall experience in the hospital.	18	30	20	152	122	3.96	1.01	Accepted
4	Patients are attended to promptly upon arrival for consultation.	120	102	30	56	34	2.36	1.18	Rejected

Source: Field Survey, 2026.

Table 4 presents respondents' assessment of waiting time before consultation in NHIS-accredited hospitals in Makurdi based on 342 respondents. The findings indicate that respondents agreed that patients spend a long time waiting before seeing a doctor for consultation (Mean = 3.68) and that delays before consultation negatively affect their overall experience in the hospital (Mean = 3.96). However, respondents disagreed that the waiting time before consultation is generally satisfactory (Mean = 2.43) and that patients are attended to promptly upon arrival for consultation (Mean = 2.36). Overall, the findings indicate that prolonged waiting time before consultation remains a significant challenge in NHIS-accredited hospitals and negatively influences patients' healthcare experiences.

Table 5: Assessment of Waiting Time for Registration and Card Processing and Client Satisfaction in NHIS-Accredited Hospitals in Makurdi

S/N	Items	SD	D	U	A	SA	Mean	Std. Dev.	Decision
1	The registration and card processing procedure takes a long time before patients are attended to.	22	34	18	154	114	3.91	1.05	Accepted
2	Registration and card processing services are completed within a reasonable time.	126	96	28	54	38	2.18	1.29	Rejected
3	Delays in registration and card processing contribute to congestion in the hospital.	20	28	18	160	116	3.95	1.02	Accepted
4	Hospital staff process patients' records promptly upon arrival.	122	100	26	60	34	2.27	1.22	Rejected

Source: Field Survey, 2026.

Table 5 presents respondents' assessment of waiting time for registration and card processing in NHIS-accredited hospitals in Makurdi based on 342 respondents. The results reveal that respondents agreed that the registration and card processing procedure takes a long time before patients are attended to (Mean = 3.91) and that delays in registration contribute to congestion within the hospitals (Mean = 3.95). Conversely, respondents disagreed that registration and card processing services are completed within a reasonable time (Mean = 2.18) and that hospital staff process patients' records promptly upon arrival (Mean = 2.27). These findings suggest that delays associated with registration and records management remain a major impediment to timely healthcare service delivery in the selected hospitals.

Table 6: Assessment of Waiting Time for Laboratory and Diagnostic Services and Client Satisfaction in NHIS-Accredited Hospitals in Makurdi

S/N	Items	SD	D	U	A	SA	Mean	Std. Dev.	Decision
1	Patients wait for a long time before laboratory tests and diagnostic services are carried out.	34	46	30	140	92	3.57	1.23	Accepted
2	Laboratory and diagnostic services are completed within a reasonable time.	112	92	36	62	40	2.35	1.21	Rejected
3	Delays in laboratory and diagnostic services affect the speed of patient treatment.	22	30	18	150	122	3.93	1.03	Accepted
4	Diagnostic test results are released promptly to patients.	118	104	28	58	34	2.31	1.17	Rejected

Source: Field Survey, 2026.

Table 6 presents respondents' assessment of waiting time for laboratory and diagnostic services in NHIS-accredited hospitals in Makurdi based on 342 respondents. The findings show that respondents agreed that patients wait for a long time before laboratory and diagnostic services are carried out (Mean = 3.57) and that delays in these services slow down patient treatment

(Mean = 3.93). However, respondents disagreed that laboratory and diagnostic services are completed within a reasonable time (Mean = 2.35) and that diagnostic test results are released promptly to patients (Mean = 2.31). This implies that delays in laboratory and diagnostic services constitute an important challenge to timely healthcare delivery and negatively affect patients' treatment experiences.

Table 7: Assessment of Waiting Time for Pharmacy and Drug Dispensing Services and Client Satisfaction in NHIS-Accredited Hospitals in Makurdi

S/N	Items	SD	D	U	A	SA	Mean	Std. Dev.	Decision
1	Patients spend a long time waiting before drugs are dispensed at the pharmacy.	28	38	26	150	100	3.73	1.16	Accepted
2	Pharmacy services are provided within a reasonable time after prescription.	130	94	24	56	38	2.12	1.31	Rejected
3	Delays in drug dispensing affect patient treatment and recovery.	20	28	20	154	120	4.01	0.98	Accepted
4	Essential drugs are made available and dispensed promptly to patients.	122	98	28	60	34	2.24	1.20	Rejected

Source: Field Survey, 2026.

Table 7 presents respondents' assessment of waiting time for pharmacy and drug dispensing services in NHIS-accredited hospitals in Makurdi based on 342 respondents. The results indicate that respondents agreed that patients spend a long time waiting before prescribed drugs are dispensed at the pharmacy (Mean = 3.73) and that delays in drug dispensing adversely affect patient treatment and recovery (Mean = 4.01). In contrast, respondents disagreed that pharmacy services are provided within a reasonable time after prescription (Mean = 2.12) and that essential drugs are made available and dispensed promptly to patients (Mean = 2.24). The findings therefore suggest that pharmacy and drug dispensing services remain a major source of delay in healthcare delivery, with adverse implications for client satisfaction among NHIS enrollees in the selected hospitals.

Table 8: Simple Linear Regression Analysis of Waiting Time Before Consultation and Client Satisfaction among NHIS Enrollees in Accredited Hospitals in Makurdi

Predictor Variable	R	R^2	Adjusted R^2	F-value	df	β	t-value	Sig.	Decision
Waiting Time Before Consultation	.682	.465	.463	295.14	(1,340)	-.512	-17.18	.000**	Reject H_{01}

Source: Field Survey, 2026

The simple linear regression analysis presented in Table 8 examined the effect of waiting time before consultation on client satisfaction among NHIS enrollees in accredited hospitals in Makurdi. The result shows a strong negative relationship between waiting time before consultation and client satisfaction (R = .682). The coefficient of determination (R^2 = .465) indicates that waiting time before consultation explains 46.5% of the variation in client satisfaction, while the remaining 53.5% is explained by other factors not included in the model. The regression coefficient (β = -0.512) indicates that an increase in waiting time before consultation leads to a corresponding decrease in client satisfaction. The model was statistically

significant, $F(1,340) = 295.14$, $p < 0.05$, with the regression coefficient also significant ($t = -17.18$, $p < 0.05$). Therefore, the null hypothesis (H_{01}), which states that waiting time before consultation has no significant effect on client satisfaction, is rejected. This implies that prolonged waiting before seeing a healthcare provider significantly reduces satisfaction among NHIS enrollees.

Table 9: Simple Linear Regression Analysis of Waiting Time for Registration and Card Processing and Client Satisfaction among NHIS Enrollees in Accredited Hospitals in Makurdi

Predictor Variable	R	R^2	Adjusted R^2	F-value	df	β	t-value	Sig.	Decision
Waiting Time for Registration and Card Processing	.704	.496	.494	334.64	(1,340)	-.536	-18.29	.000	Reject H_{02}

Source: Field Survey, 2026

Table 9 presents the regression analysis on the influence of waiting time for registration and card processing on client satisfaction. The result indicates a strong negative relationship between administrative waiting time and client satisfaction ($R = .704$). The R^2 value of .496 shows that waiting time associated with registration and card processing accounts for 49.6% of the variations observed in client satisfaction. The beta coefficient ($\beta = -0.536$) demonstrates that increased delays in registration and card processing significantly reduce satisfaction among NHIS enrollees. The regression model was statistically significant, $F(1,340) = 334.64$, $p < 0.05$, while the predictor variable was also significant ($t = -18.29$, $p < 0.05$). Consequently, the null hypothesis (H_{02}) is rejected. This indicates that delays in registration procedures, card processing, and patient record management constitute significant barriers to achieving higher levels of client satisfaction.

Table 10: Simple Linear Regression Analysis of Waiting Time for Laboratory and Diagnostic Services and Client Satisfaction among NHIS Enrollees in Accredited Hospitals in Makurdi

Predictor Variable	R	R^2	Adjusted R^2	F-value	Df	β	t-value	Sig.	Decision
Waiting Time for Laboratory and Diagnostic Services	.671	.450	.448	278.18	(1,340)	-.489	-16.68	.000	Reject H_{03}

Source: Field Survey, 2026

Table 10 shows the regression analysis of the effect of waiting time for laboratory and diagnostic services on client satisfaction. The findings reveal a significant negative relationship between laboratory service delays and client satisfaction ($R = .671$). The R^2 value of .450 indicates that waiting time for laboratory and diagnostic procedures explains 45.0% of the variation in client satisfaction. The beta coefficient ($\beta = -0.489$) indicates that longer waiting periods for laboratory investigations and diagnostic results are associated with reduced satisfaction among NHIS users. The model produced a statistically significant result, $F(1,340) = 278.18$, $p < 0.05$, and the predictor variable was significant ($t = -16.68$, $p < 0.05$). Therefore, the null hypothesis (H_{03}) is rejected, confirming that delays in laboratory and diagnostic services significantly affect client satisfaction.

Table 11: Simple Linear Regression Analysis of Waiting Time for Pharmacy and Drug Dispensing Services and Client Satisfaction among NHIS Enrollees in Accredited Hospitals in Makurdi

Predictor Variable	R	R^2	Adjusted R^2	F-value	Df	β	t-value	Sig.	Decision
Waiting Time for Pharmacy and Drug Dispensing Services	.719	.517	.516	363.86	(1,340)	-.558	-19.07	.000	Reject H_{04}

Source: Field Survey, 2026

Table 11 presents the regression analysis of the effect of waiting time for pharmacy and drug dispensing services on client satisfaction. The result indicates the strongest negative relationship among the examined waiting time dimensions (R = .719). The R^2 value of .517 shows that pharmacy and drug dispensing waiting time explains 51.7% of the variation in client satisfaction. The negative beta coefficient (β = -0.558) demonstrates that increased delays in obtaining prescribed medications significantly reduce client satisfaction. The regression model was statistically significant, $F(1,340) = 363.86$, $p < 0.05$, and the independent variable significantly predicted client satisfaction ($t = -19.07$, $p < 0.05$). Therefore, the null hypothesis (H_{04}) is rejected, indicating that waiting time for pharmacy and drug dispensing services significantly influences client satisfaction among NHIS enrollees.

Discussion of Findings

From the data collected and presented above, the study revealed that waiting time before consultation remains a significant factor influencing client satisfaction among NHIS enrollees in accredited hospitals in Makurdi. The findings showed that many patients experience prolonged delays before seeing healthcare providers, and such delays negatively affect their overall perception of service quality. The result suggests that although NHIS enrollees expect health insurance coverage to facilitate timely access to healthcare services, the reality of lengthy consultation queues creates a gap between expected and actual service experiences. The persistence of consultation delays may be attributed to factors such as high patient turnout, inadequate numbers of healthcare providers, poor appointment scheduling systems, and limited capacity of healthcare facilities to manage increasing demand. This finding agrees with Oche and Adamu (2013), who observed that prolonged waiting time in outpatient departments is a major source of dissatisfaction among patients in Nigerian hospitals. Similarly, Iloh et al. (2019) reported that delays at consultation points negatively influence patients' assessment of healthcare quality. However, unlike healthcare systems where electronic appointment management and improved patient flow mechanisms have reduced waiting periods, many Nigerian healthcare facilities continue to rely on manual processes, contributing to congestion and delayed access. The finding is further explained by Expectancy Disconfirmation Theory (Oliver, 1977), which suggests that satisfaction occurs when actual service performance meets or exceeds expectations. In this case, prolonged consultation waiting time creates negative disconfirmation because patients' expectations of prompt medical attention are not achieved. The significant regression result confirms that consultation waiting time is an important predictor of client satisfaction, indicating the need for improved patient scheduling, increased healthcare workforce, and better management of outpatient services.

The study also found that waiting time associated with registration and NHIS card processing significantly affects client satisfaction. The findings indicate that administrative procedures remain an important source of delay, with respondents reporting that registration processes, record handling, and card verification often contribute to congestion and slow access

to healthcare providers. This suggests that challenges within the administrative structure of NHIS-accredited hospitals may undermine the objective of health insurance by creating additional barriers before patients receive care. The likely causes of these delays include dependence on manual documentation, inadequate administrative personnel, poor coordination between NHIS desks and clinical departments, and inefficient patient record management systems. This finding supports Akinyinka et al. (2019), who identified administrative bottlenecks as persistent challenges affecting healthcare service delivery in Nigeria. It also aligns with Adesanya et al. (2012), who noted that weak administrative systems reduce responsiveness and efficiency within healthcare institutions. Nevertheless, the finding differs from settings where digital registration platforms and integrated health information systems have improved patient processing and reduced administrative waiting time. From the perspective of Expectancy Disconfirmation Theory (Oliver, 1977), NHIS enrollees expect insurance membership to simplify healthcare access; however, prolonged administrative procedures create a mismatch between expectations and actual experiences, resulting in dissatisfaction. The significant relationship established through regression analysis therefore demonstrates that improving registration processes and adopting efficient patient management systems are essential for enhancing client satisfaction.

The findings further revealed that waiting time for laboratory and diagnostic services significantly influences client satisfaction among NHIS enrollees. Respondents indicated that delays in laboratory investigations, diagnostic procedures, and the release of test results prolong hospital visits and negatively affect confidence in healthcare services. The finding implies that healthcare quality is not determined only by the availability of medical consultation but also by the efficiency of supporting diagnostic processes required for effective treatment decisions. The delays observed may be linked to inadequate laboratory equipment, shortages of technical personnel, high demand for diagnostic services, and administrative procedures associated with NHIS approval for certain investigations. The finding corresponds with Iloh et al. (2019), who identified inefficiencies in diagnostic services as important contributors to patient dissatisfaction in Nigerian hospitals. Similarly, Oche and Adamu (2013) emphasised that delays in obtaining diagnostic results increase patient waiting time and weaken perceptions of service efficiency. However, in healthcare environments with advanced laboratory technologies and automated reporting systems, diagnostic turnaround time is significantly reduced. The finding supports Expectancy Disconfirmation Theory (Oliver, 1977) because patients who expect NHIS coverage to guarantee efficient healthcare services experience dissatisfaction when diagnostic delays prevent timely treatment. The significant effect of laboratory waiting time on satisfaction highlights the need for improved laboratory capacity, faster result management systems, and better coordination between diagnostic units and clinical departments.

The study finally established that waiting time for pharmacy and drug dispensing services has a significant negative influence on client satisfaction, with this dimension representing one of the strongest contributors to dissatisfaction among NHIS enrollees. The findings showed that patients often experience delays after receiving prescriptions, with challenges relating to drug availability, verification procedures, and dispensing processes affecting timely access to medications. This suggests that the effectiveness of NHIS services is judged not only by patients' ability to consult healthcare providers but also by their ability to obtain prescribed medicines promptly. The persistence of pharmacy-related delays may be associated with weaknesses in drug supply management, inadequate pharmacy personnel, stock limitations, and administrative procedures required for NHIS-covered medications. This finding agrees with Akinyinka et al. (2019), who identified weaknesses in healthcare service processes, including pharmaceutical management, as factors affecting service quality. It also supports Adesanya et al. (2012), who argued that structural challenges within healthcare

delivery systems influence patients' experiences and satisfaction levels. Unlike settings with efficient pharmaceutical supply chains and electronic dispensing systems, delays remain common in many Nigerian healthcare facilities due to operational constraints. The finding is consistent with Expectancy Disconfirmation Theory (Oliver, 1977), as NHIS enrollees expect insurance coverage to provide timely access to essential medicines, but delays in drug dispensing create negative experiences that reduce satisfaction. The significant regression result confirms that improving drug availability, strengthening pharmacy management systems, and reducing dispensing delays are necessary for improving satisfaction with NHIS services.

Conclusion

The study examined the relationship between timeliness of healthcare service delivery and client satisfaction in NHIS-accredited hospitals in Makurdi, focusing on waiting time before consultation, registration and card processing, laboratory and diagnostic services, and pharmacy and drug dispensing services. The findings established that all dimensions of service timeliness significantly influence client satisfaction, as patients experienced delays at different points of service delivery, which negatively affected their perception of healthcare quality. Hypothesis testing further confirmed that each dimension of waiting time has a significant effect on client satisfaction, resulting in the rejection of all null hypotheses. The study therefore demonstrates that operational inefficiencies within NHIS-accredited hospitals remain important barriers to achieving effective and patient-centred healthcare delivery. The implication of these findings is that improving NHIS performance requires attention beyond expanding enrolment coverage; it also requires reforms that enhance the efficiency of service delivery processes within accredited facilities. For policy makers and NHIS administrators, strengthening monitoring mechanisms, promoting digital health management systems, improving patient flow procedures, and ensuring adequate staffing and pharmaceutical supply systems are essential steps toward achieving the goals of universal health coverage and improved patient experience. For healthcare managers, reducing avoidable delays should become a key quality improvement priority because patients often evaluate the effectiveness of the NHIS based on the speed and ease with which they access services. However, the study has some limitations. The study was conducted in selected NHIS-accredited hospitals in Makurdi Local Government Area, which may limit the generalisation of the findings to all NHIS facilities across Benue State or Nigeria. In addition, the study relied largely on patients' self-reported experiences, which may be influenced by individual expectations and perceptions. Future studies may consider expanding the scope to include more healthcare facilities and incorporate objective service indicators such as actual waiting time records and facility performance data.

Recommendations

Based on the findings of the study, the following recommendations are made:

i. To address delays before consultation, management of NHIS-accredited hospitals should strengthen outpatient service management through the introduction of effective triage systems, appointment scheduling mechanisms, and improved patient flow arrangements. Since prolonged waiting before consultation was found to significantly reduce client satisfaction, hospital administrators should ensure adequate deployment of medical personnel during peak periods, while NHIS authorities should include consultation waiting time as a routine performance indicator during facility accreditation and monitoring exercises.

ii. To reduce delays associated with registration and NHIS card processing, hospital management should adopt electronic registration and patient record management systems to minimise dependence on manual documentation and improve the speed of patient processing. Administrative staff responsible for NHIS enrolment verification

and records management should receive continuous training on efficient patient handling procedures. In addition, NHIS should enforce compliance with standardised administrative processes among accredited facilities to reduce unnecessary bureaucratic delays experienced by enrollees

iii. To improve the timeliness of laboratory and diagnostic services, hospital management should strengthen laboratory capacity by ensuring the availability of essential diagnostic equipment, adequate technical personnel, and efficient result management systems. Since delays in diagnostic procedures were found to negatively affect client satisfaction, NHIS authorities and relevant government agencies should support accredited facilities through regular assessment of laboratory capacity and targeted interventions to improve diagnostic turnaround time.

iv. To minimise delays in pharmacy and drug dispensing services, hospital management should improve pharmaceutical supply chain systems by ensuring consistent availability of NHIS-approved medicines and reducing delays caused by drug verification and dispensing procedures. Pharmacy units should introduce effective queue management systems and review dispensing workflows to improve service efficiency. NHIS authorities should regularly monitor drug availability and dispensing performance in accredited hospitals to ensure that enrollees receive prescribed medications promptly and that the objectives of improved access and satisfaction are achieved.

v. To enhance overall timeliness of healthcare delivery under NHIS, NHIS management should establish measurable service delivery benchmarks for accredited hospitals, including maximum acceptable waiting times for consultation, registration, diagnostic services, and drug dispensing. Regular performance reviews and feedback mechanisms involving patients should be implemented to identify operational challenges and ensure continuous improvement in service quality.

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