Texila International Journal of Academic Research
ISSN: 2520-3088
DOI: 10.21522/TIJAR.2014.12.04.Art001

Evaluation of Waiting Time and Factors Influencing Healthcare Quality on Patient Satisfaction: A Case Study Brookfield's Outpatient Department Freetown

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Abstract

Patient satisfaction which is the fulfilment or fulfilling of a person's expectations from a service is one of the most important indicators of a healthcare quality. This study evaluates the impact of waiting time and other major factors affecting healthcare quality on patient satisfaction at the outpatient department of Brookfield's Health Centre, Freetown, Sierre Leone. A structured questionnaire was used to collect data from 150 patients, and statistical analyses were conducted to determine relationships between waiting time, accessibility, reliability, communication, and patient satisfaction. Findings reveal that long waiting times are negatively associated with patient satisfaction, highlighting the need for efficient scheduling and patient flow management. Additionally, accessibility was found to significantly influence patient satisfaction with care. The study reveals that reliability, measured by the consistency of service delivery and effective communication, particularly the provision of clear health information, are major determinants of patient satisfaction. Regression analysis confirms that all four considered factors are significantly associated with patient satisfaction ($p < 0.05$). These results emphasize the need for healthcare administrators to implement strategic interventions such as optimized appointment systems, enhanced communication training for staff, and improved service reliability. Addressing these issues can enhance patient trust and satisfaction which will result to better healthcare experiences.

Keywords: *Healthcare Quality, Outpatient Department, Patient Experience, Patient Satisfaction, Service Efficiency, Waiting Time.*

Introduction

In today's healthcare landscape, patient satisfaction has become a paramount indicator of service quality, particularly in outpatient settings where access to timely care is essential [1]. One of the most significant challenges faced by outpatient departments in public healthcare is excessive waiting time, which has been linked to decreased patient satisfaction and negative perceptions of healthcare quality [2]. Long waiting time not only frustrate patients but can also lead to adverse health outcomes, as delays in receiving care can exacerbate medical conditions [3]. Therefore, addressing this issue is essential for improving the patient experience and ensuring effective healthcare delivery [4].

People who do not have access to quality care frequently have a poorer quality of life and a lower lifespan than those who have access to a stable, affordable and accessible healthcare system [11]. Countries with effective and efficient healthcare systems have better health outcomes than countries with inefficient and ineffective healthcare systems [12]. The quality of healthcare is influenced by a wide range of factors, these include the care process (coordinated care, safe care, preventative care

Received: 11.11.2024 ***Accepted: 17.04.2025*** ***Published on: 31.10.2025***
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measures and patient preferences), access (timeliness and affordability), administrative efficiency, equity and healthcare outcomes (population health, mortality amenable to healthcare and disease-specific health outcomes) [13].

A major challenge faced by outpatient departments in public healthcare is long waiting time, which has been linked to decreased patient satisfaction and negative perceptions of healthcare quality [2]. Long waiting time not only frustrate patients but can also lead to adverse health outcomes, as delays in receiving care can exacerbate medical conditions [3]. Therefore, addressing this issue is critical for improving the patient experience and ensuring effective healthcare delivery [4]. The length of waiting time varies by country and even within a country, it also varies from one health centre to another; this evidence shows that both developed and developing countries experience problems with long waiting time [16].

Several existing solutions have been proposed to mitigate waiting time. Strategies such as improved appointment scheduling systems, triage protocols, and enhanced patient flow management have been explored [5]. For instance, implementing Electronic Health Record (EHR) systems and online appointment scheduling can streamline the patient intake process, potentially reducing waiting time [6]. By allowing patients to book appointments more flexibly and enabling providers to manage their schedules efficiently, these technologies can significantly reduce waiting times and enhance patient satisfaction. Additionally, the use of patient flow management software has shown promise in optimizing resource allocation and minimizing bottlenecks during peak hours [7]. However, the effectiveness of these solutions varies depending on the specific context and resources available within each healthcare facility [8].

Despite the potential benefits of various interventions, limitations remain in effectively addressing waiting time issues [9]. Many outpatient departments still struggle with understaffing, particularly during peak hours, leading to delays in patient care. Research has shown that patients often have differing tolerances for waiting based on their health conditions and the urgency of their care needs [10]. This study aims to evaluate waiting time and factors influencing health care quality on patient satisfaction within an outpatient department. By examining the relationship between these variables, the research seeks to provide actionable insights that can guide healthcare providers in enhancing patient experiences. The findings are expected to contribute to a better understanding of the importance of managing waiting time.

Material and Methods

Description of the Site

The study was conducted at the outpatient department of Brookfield's Health Centre which is located at the central part of Freetown in the Western region of Sierra Leone. It operates 24 hours. The health centre offers regular medical clinics every day and specialty clinics Monday to Friday. It has a health care team that includes community health officers, nurses, pharmacists, laboratory technicians, cleaners, potters and medical records officers. The facility has 100 nurses, 20 CHOs, and 250 staff members, with a total of 60 beds. The health centre has a several wards and departments, which include the following: ward one (pediatric word) , ward two (Maternal word), ward three (trauma unit), ward four (male word), ward five (Male and Female TB), ward six (general female word), Pharmacy/Drug Store, Mortuary Unit, EPI unit, Laboratory and Blood Bank, Kitchen Department and the Administrative Department is entirely being headed by the CHO In charge. The Outpatient department has ten beds and fifteen employees, and it is overseen by an in-charge.

Research Design

The present study evaluates waiting time and the factors influencing patient satisfaction. The data was collected through structured surveys using questionnaires administered to patients upon their departure from the outpatient department. The surveys included items addressing the constructs employed in the study.

Sampling and Sample Size

Purposive sampling technique was used to select the targeted respondents for the research. A sample is a part of a population that is an accurate representative of that population. Purposive sampling, also known as judgmental or selective sampling, is a non-probability sampling technique where researchers intentionally select individuals or cases that meet specific criteria relevant to the research study. This method allows the researcher to target a particular group of participants who possess particular characteristics or experiences that are of interest to the research objectives. The sample size for this study was 150. This number was determined based on statistical power analysis, aiming to achieve sufficient power (typically 0.80) to detect a medium effect size (Cohen's d = 0.5) at a 95% confidence level (alpha = 0.05).

Study population

The study population was patients who visited the outpatient department at the time of the study and who were present during data collection period. For the patients to be part of the study, they must meet the below criteria.

Inclusion and Exclusion criteria

Inclusion Criteria

1. Patients aged 18 years and older.
2. Individuals who received outpatient services in the healthcare facility.
3. Patients willing to provide consent to participate in the survey.

Exclusion Criteria

1. Patients under 18 years of age.
2. Patients with severe cognitive impairment or language barriers that prevent effective survey participation.
3. Patients receiving emergency care services, as their waiting time and satisfaction factors may significantly differ from those in non-urgent care.

Research Instrument

The structured questionnaire was adopted from studies conducted by [11, 12]. The research instruments cover items on waiting time, patient satisfaction and healthcare quality dimensions. To establish validity, the instrument was tested in a pilot study with a small subset of patients (n = 30) to confirm clarity, ease of understanding, and applicability. Additionally, internal consistency was assessed using Cronbach's alpha, with values above 0.70 indicating satisfactory reliability of the items within the survey.

Ethical Clearance

The Government hospital approved to carrying out the research. Before collecting data, all participants gave informed consent after the purpose of the study was conveyed to all individuals. Confidentiality was also maintained. However, no formal ethical clearance was obtained due to limitations in accessing an ethics review board for this study.

Data Analysis

Data from the survey responses were analyzed using SPSS (Statistical Package for the Social Sciences). Descriptive statistics, such as percentage and frequency were used to summarize the obtained data. Correlational and regression analyses were employed to assess the relationship between independent and dependent variables, with a significance level set at $p < 0.05$ for inferential tests. Reliability and validity.

Results

Table 1 presents the distribution of the study sample based on demographic variables. For gender, 58.7% were male while 41.3% were female. For age, patients between 21-35 years accounted for 38.7% which was the highest while the least was less than 20 years with a percentage of 15.3. Regarding employment status, proportion of respondents were employed (26.7%). Most respondents had bachelor degree (73.3%).

Table 1. Socio- demographic Characteristics of Respondents

Variable	Category	*F*	%
Gender	Female	62	41.3
	Male	88	58.7
Age	Less than 20 years	23	15.3
	21-35 years	58	38.7
	36-50 years	24	16.0
	more than 50 years	45	30.0
Employment status	Employee/ staff	40	26.7
	Housewives	38	25.3
	Retired	15	10.0
	Students	47	31.3
	Others	10	6.7
Education level	High school or below	31	20.7
	Bachelor's Degree	110	73.3
	Master's Degree	6	4.0
	Doctoral Degree	3	2.0

Reliability and Validity

The term "reliability" refers to a measurement that consistently gives results with equal values, it is recommended that a suitable reliability scale value is 0.67 or above [13]. It evaluates the consistency, precision and repeatability of a study. Cronbach's alpha is a research statistic for evaluating the internal consistency, or reliability, of a group of scales or test items [14]. The Cronbach alpha coefficients for the constructs are high and acceptable. Patients' waiting time had four items with a value of 0.824, Patients' satisfaction had three items with a value of 0.796. Accessibility had two items with a value of 0.886. Reliability had four items with a value of 0.841. Lastly, communication had five items with a value of 0.873. The degree to which a survey measures what it claims to measure is known as validity. It refers to how closely a measure's results match the variable for which it was created [15]. For a factor loading to be significant, a threshold of 0.5 as recommended by [16]. Waiting time had a factor loading ranging 0.67-0.77, patient satisfaction within 0.73-0.82, accessibility within 0.70-0.79, reliability within 0.81-0.88 and communication within 0.79-0.86.

Table 2. Reliability and Validity Analysis

Constructs	Items	Loadings	Cronbach's Alpha
Patients' waiting time	3	0.67-0.77	0.824
Patient satisfaction	3	0.73-0.82	0.796
Accessibility	2	0.70-0.79	0.886
Reliability	4	0.81-0.88	0.841
Communication	4	0.79-0.86	0.873

Descriptive Statistics

Waiting Time

The result of patient evaluating waiting time is shown in Table 3 below. It showed that 13.3% of the respondents waited 1-15 minutes, 15.3% waited 16-30 minutes, 19.3% waited for 31-45 minutes, 22.7% waited 46-55 minutes, while 29.3% of respondents waited more than 56 minutes for registration and seeing doctor. The Table also showed that 35.3% of the respondents stayed 1-15 minutes, 23.3% waited 16-30 minutes, 10.0% stayed 31-45 minutes, 18.0% spent 46-55 minutes, and 13.3% spent over 56 minutes during consultation. The Table further revealed that 26.7% of the respondents waited 1-15 minutes, 25.3% waited 16-30 minutes, 14.0% waited 31-45 minutes. 22.0% waited 46-55 minutes, 18.0% waited 56 minutes or above after consultation to get their prescription.

Table 3. Patient Evaluation on Waiting Time

Items	Scale	N	Percentage (%)
How long did registration and waiting for the doctor take?	1-15 minutes	20	13.3
	16-30 minutes	23	15.3
	31-45 minutes	29	19.3
	46-55 minutes	34	22.7
	Above 56 minutes	44	29.3
How long did the consultation time take?	1-15 minutes	53	35.3
	16-30 minutes	35	23.3
	31-45 minutes	15	10.0
	46-55 minutes	27	18.0
	Above 56 minutes	20	13.3
How long after consultation did you wait to get your prescription?	1-15 minutes	40	26.7
	16-30 minutes	38	25.3
	31-45 minutes	21	14.0
	46-55 minutes	33	22.0
	Above 56 minutes	18	12.0

Accessibility

Table 4 reveals that 32.7% of the respondents agreed that the hospital is approachable, 26.7% strongly agreed, 10.0% were neutral, 17.3% strongly disagreed while 13.3% disagreed. As expected from a public facility, most respondents agreed that the health service charge of hospital is affordable (28.0%).

Table 4. Patient Evaluation on Accessibility

Items	Scale	N	Percentage (%)
The hospital is approachable	Strongly disagree	26	17.3
	Disagree	20	13.3
	Neutral	15	10.0
	Agreed	49	32.7
	Strongly agreed	40	26.7
Health service charge of hospital is affordable	Strongly disagree	23	15.3
	Disagree	36	24.0
	Neutral	22	14.7
	Agreed	42	28.0
	Strongly agreed	27	18.0

Reliability

Table 5 indicates that 29.3% of the respondents strongly disagreed, 17.3% disagreed 20.7% agreed and 18.0% strongly agreed that the hospital carries out guaranteed health services to cover requirements of patient. The Table also shows that 16.7% agreed, 14.0% strongly agreed, 27.3% disagreed and 3.3% strongly disagreed that staff working hospital can manage issues in a good manner and on time while 38.7% were neutral. The Table also reveals that the hospital gives service with guaranteed date and time, 36.0% agreed, 12.0% strongly agreed, 10.7 strongly agreed, 25.3% disagreed and 16.0% were neutral. Most respondents were neutral (34.0%) about the hospital keeping up secure information and data entry records, 16.7% agreed, 12.7% strongly agreed, 9.3% strongly disagreed and 27.3% disagreed.

Table 5. Patient Evaluation on Reliability

Items	Scale	N	Percentage (%)
The hospital carries out guaranteed health services to cover requirements of patient	Strongly disagree	44	29.3
	Disagree	26	17.3
	Neutral	22	14.7
	Agreed	31	20.7
	Strongly agreed	27	18.0
Staff working hospital can manage issues in a good manner and on time	Strongly disagree	5	3.3
	Disagree	41	27.3
	Neutral	58	38.7
	Agreed	25	16.7
	Strongly agreed	21	14.0
Hospital gives service with guaranteed date and time	Strongly disagree	16	10.7
	Disagree	38	25.3
	Neutral	24	16.0
	Agree	54	36.0
	Strongly agree	18	12.0

Hospital keeps up secure information and data entry records	Strongly disagree	14	9.3
	Disagree	41	27.3
	Neutral	51	34.0
	Agree	25	16.7
	Strongly agree	19	12.7

Communication

Table 6 shows 19.3% strongly disagreed, 34.0% disagreed, 11.3% agreed while 18.7 strongly agreed that they received enough explanation for each test they undergo. It was also revealed that 35.3% agreed that the physicians were ready to answer all questions related to the illness. Majority of the respondents strongly agreed (31.3%) that the providers gave enough information about their therapy. However, 34.0% strongly disagreed that the health workers of hospital use language patients can easily understand.

Table 6. Patient Evaluation on Communication

Items	**Scale**	**N**	**Percentage (%)**
I received enough explanation for each test I undergo	Strongly disagree	29	19.3
	Disagree	51	34.0
	Neutral	25	16.7
	Agreed	17	11.3
	Strongly agreed	28	18.7
The physicians were willing to reply all questions related to my illness	Strongly disagree	23	15.3
	Disagree	43	28.7
	Neutral	16	10.7
	Agreed	53	35.3
	Strongly agreed	15	10.0
The providers gave enough information of my therapy	Strongly disagree	18	12.0
	Disagree	29	19.3
	Neutral	25	16.7
	Agreed	31	20.7
	Strongly agree	47	31.3
Health workers of hospital use language patients can easily understand	Strongly disagree	51	34.0
	Disagreed	22	14.7
	Neutral	49	32.7
	Agreed	21	14.0
	Strongly agreed	7	4.7

Patient Satisfaction

Table 7 showed that 29.3% strongly disagreed that they were satisfied with health service from the hospital while 20.0% strongly agreed. Most respondents (42.7%) disagreed that they were treated in a friendly and kind manner. Most patients disagreed with the hospital frontline workers on registration and emergency (38.0%).

Table 7. Patient Evaluation on Patient Satisfaction

Questions	Scale	N	Percentage (%)
I was satisfied health service received from this hospital	Strongly disagree	44	29.3
	Disagree	40	26.7
	Neutral	16	10.7
	Agreed	20	13.3
	Strongly agreed	30	20.0
The hospital workers treat me in a friendly and kind manner, I am satisfied	Strongly disagree	27	18.0
	Disagree	64	42.7
	Neutral	6	4.0
	Agreed	30	20.0
	Strongly agreed	23	15.3
I am satisfied with how hospital frontline staff attend to emergency and registration	Strongly disagree	43	28.7
	Disagree	57	38.0
	Neutral	30	20.0
	Agreed	20	13.3
	Strongly agreed	-	-

Correlation and Regression

The analysis represented in Table 8 revealed a significant association between the variables which met the criteria for conducting the regression analysis. Regression analysis is a statistical method used to examine the relationship between one or more independent variables (predictors) and a dependent variable (outcome). It helps to understand how the dependent variable changes when one or more independent variables change while holding other factors constant [17]. The regression result revealed a significant result on the variables.

Table 8. Correlation and Regression Analysis

Path	B	p	Decision
Waiting time-patient satisfaction	0.608	0.001	Supported
Accessibility-patient satisfaction	0.578	0.034	Supported
Reliability-patient satisfaction	0.677	0.025	Supported
Communication-patient satisfaction	0.589	0.041	Supported

Discussion

This present study aims to evaluate waiting time and factors influencing health care quality on patient satisfaction within an outpatient department. Patients' satisfaction is a key component for measuring the quality of healthcare. The findings reveal that waiting time has an impact on patient satisfaction which is supported by the findings of [18] in Saudi Arabia. Their study investigated the level of satisfaction with various aspects of care services, one of which was waiting, which revealed that waiting time had a significant association with patient satisfaction. Another study undertaken by [19] found a substantial link between waiting hour and client satisfaction. According to the result of their study, the participants were dissatisfied with the hour waited in the facility. It was found that if

the patient's waiting time at a public hospital is extended, their attitude will change. Moreso, a study conducted by [20] also demonstrated that an increased length of waiting hours, especially between filling form and consultation, resulted in an increased rate of dissatisfaction. Also, a study conducted by [21] revealed that the overall satisfaction and clinic wait time (CWT) showed a negative and significant correlation.

Reliability is the ability to deliver promised services consistently and accurately, i.e., when something is promised, it is delivered, and services are delivered on time [22]. It was observed that patient satisfaction is affected by the attitude of health workers, the ability to provide immediate attention, the ability to send information, and the physicians' willingness to simply explain to the patient what is wrong before providing information about their medications and the environment. The majority of patients of this study were satisfied with the reliability of this study's findings which is supported by the finding of [23] and [24].

Communication is the most important aspect in improving healthcare service quality and patient satisfaction [25]. The findings revealed how patients are given clear explanations and sufficient information about the tests they are undergoing. Healthcare staff, notably physicians, provided extensive information regarding patient care and health status. If a physician is perceived as being attentive, and empathetic, patients are likely to experience a positive exchange and attain satisfaction with their care [26].

Accessibility is essential in impacting patient satisfaction, as it determines the ease with which patients can obtain healthcare services. healthcare facilities that are readily available, well-located, and equipped with sufficient medical personnel provides patients with positive experiences. Accessibility includes factors such as geographical proximity, affordability and appointment availability. The implementation of strategies to enhance accessibility such as extended service hours and efficient appointment scheduling makes patients feel more valued and experience greater trust in the healthcare system. The obtained finding is in tandem with those of [15] and [27].

Conclusion

This study shows the significant impact of waiting time on patients' satisfaction and the perceived quality of healthcare services in the outpatient department of hospitals. The findings highlight that longer waiting times are directly associated with lowers levels of patient satisfaction, revealing the importance of efficient patient flow and timely service delivery. The findings also show the relevance of reliability, accessibility and effective communication as factors impacting the level of patient satisfaction in public healthcare. The implications of these findings extend beyond mere acknowledgment of patient dissatisfaction; they serve as a call to action for healthcare administrators and policymakers. By prioritizing strategies to minimize waiting times, such as optimizing appointment scheduling, improving staff efficiency, and streamlining patient flow processes as well as addressing other factors, healthcare facilities can significantly enhance patient satisfaction and trust in service delivery.

Conflict of Interest

The author declares no conflict of interest.

Acknowledgement

I will like to express my deepest gratitude to the ministry of health Sierra Leone more especially to the Brookfield's community health centre Freetown for the invaluable support and permission which were crucial to the success of this project. Also want to thank the Texila American university authorities for the tremendous support in carrying out this project.

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