

# Assessing Emergency Room Wait Time And Patients' Satisfaction In A Nigerian Teaching Hospital

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## ABSTRACT

**Aim:** This study aims to assess the emergency room wait time and patients' satisfaction in a Nigerian Tertiary Hospital

**Methods:** The study was a cross sectional study that targeted 314 consenting consecutive patients who sought emergency medical care between April and July 2011. The respondents were interviewed using a modified satisfaction questionnaire and a protocol was designed for collection of relevant socio-demographic and clinical data.

**Results:** The average wait time of patients was 1hour 11minutes  $\pm$  0.38(71minutes). A considerable number, 146(46.5%) respondents were satisfied with the care received at the emergency department of the hospital. A similar number, 148(47.1%) of the respondents were dissatisfied. The remaining 20(6.4%) of the respondents were undecided about their level of satisfaction. The major reason for dissatisfaction was delay in receiving care at the various service points of the hospital. Other reasons included lack of privacy, inadequate attention, poor staff attitude and high cost of investigations and medications.

**Conclusions:** The overall impression of a considerable number of the respondents concerning patients' care in the emergency room of the University of Benin Teaching Hospital was that they were fairly satisfied with the level of care rendered to them there. The average wait time from the study was relatively lower than the values deduced from similar studies. This was probably due to the fact that the researcher designed a more objective means of estimating the wait time. This would be very useful during further similar studies.

**KEY WORDS:** Emergency room waiting time, patients' satisfaction.

## Introduction

Hospital wait times are often problem issues and the focus of numerous studies.<sup>1</sup> It has now become a political nightmare with enough visibility to attract renewed provincial and federal funding. Long wait time in hospital causes discontent among patients.<sup>2</sup> Many studies have demonstrated various factors, which may result in delayed treatment in emergency departments (E.Ds).

Satisfaction refers to a state of pleasure or

contentment with an action, event or service, especially one that was previously desired.<sup>3</sup> When applied to medical care, patient satisfaction can be considered in the context of patients' appraisal of their desires and expectations of health care.<sup>4</sup> Patients' satisfaction according to a study done in Nigeria is efficiency of service rendered to patients. Here, efficiency refers to the promptness of the care given to patients, including issues like wait time before consultation, amount of time spent with the doctor subsequently, quick response to emergencies, and quick dispensation of drugs, fast as well as accurate laboratory services etcetera.<sup>4</sup>

Long wait time in industrial hospitals can lead to man-hour loss and interfere with production.<sup>2</sup>

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Consultation in general hospitals and most emergency departments are associated with significant wait time.<sup>2</sup>

Due to the unplanned nature of patient attendance, the department must provide initial treatment for a broad spectrum of illnesses and injuries, some of which may be life-threatening and require immediate attention. Patients arriving independently or by ambulance are typically triaged by a nurse with training in emergency medicine. Patients are seen in order of medical urgency, not in order of arrival. Patients are triaged to the resuscitation area, major area, or minor area.<sup>5</sup>

Wait times and clients' satisfaction has become the major tools for measuring the quality of health care received by people worldwide; many studies have also shed light on the understanding of wait times as well as provide new information on wait time and satisfaction.

This study was an attempt to assess the emergency wait time and patients' level of satisfaction in the University of Benin Teaching Hospital, (UBTH); as there are presently very few data regarding wait time and quality of service in many Nigerian tertiary health institutions.

### MATERIALS AND METHODS

The study was carried out in the Emergency room (E.R) of the University of Benin Teaching Hospital, Benin City, Edo State, Nigeria. The hospital is a level II trauma Centre with an 850 in-patient bed capacity. It is located along the ever-busy Benin-Lagos road in Egor Local Government Area of Edo state. It was established in 1973 following the enactment of Edict 12 of 1973; as the sixth of the first generation tertiary institution. The hospital has a relatively busy emergency department for both pediatrics, medical as well as surgical emergencies. An audit at the time of this study showed that an average of twenty-two (22) patients assessed the UBTH emergency room daily, of these 314 respondents were interviewed with structured questionnaires with both open and close ended questions based on sample size calculation. Appropriate adjustments were made to the questionnaire after an initial pretest. When patients are brought to the emergency room, a

triage team; made up of a casualty doctor (Medical Officer) and a Registered nurse (RN), usually is first to see the patient in order to ascertain the state of the patient. This is to avoid admitting brought-in-dead (BIDs), as well as to determine those who may require more prompt or urgent care. The ward clerk would usually give the patient relative a sheet of paper instructing the revenue unit to accept payments for ward consumables (WC) and a card(registration), or a case note; after which the patient's relative would proceed to the records unit where the temporary case note is then issued. The case note is then forwarded to the nurses' station where the patient's vital signs are taken, before the card is subsequently sent to the casualty doctor, who is the first doctor to clinically evaluate such patient, stabilize same before sorting and referral to appropriate specialty or manage solely; depending on severity. However, dire emergency cases usually bypass these protocols, as they are seen even before such patients are registered. The sheet of paper issued by the ward clerk was redesigned and used as "cheat cards" for objective evaluation of wait time at three important points of care viz: the time at which the clerk issues the authority to pay "sheet of paper", the time the patient's vital signs are taken by the nurse and the time the patient is subsequently seen by the casualty officer respectively. These were taken as T1, T2 and T3 respectively. The difference between T3 and T1 was calculated to be the wait time for each respondent. The difference between T2 and T1 was calculated to be the time lag between patients' arrival and taking of vital signs by a nurse. Also the time lapse between nurses' vitals and the doctors' provision of care was calculated as the difference between T3 and T2. The averages of these were calculated to get the mean wait times.

Due permission was also sought from the coordinator of the accident and emergency department of the hospital before proceeding to carry out the field work. The aim of the study was clearly explained to the various respondents with the premise that information gathered in the course of the study was solely for research purposes and would be kept very confidential. To

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this end the 'permission to pay slips' (designed by researcher) were not linked with any particular questionnaire and respondents' names were naturally omitted from the bio-data column.

The data was analyzed using the Statistical Package for Social Sciences- SPSS, version 16. And WIN PEPI (Version 11.14). Modified Likert's scale was used to assess the level of satisfaction of respondents with various cadres of workers as well as the wait time rating at the various service points in the emergency room. The relationship between the overall level of satisfaction of the respondents and their level of satisfaction with various members of staff at the emergency room of the hospital was also computed using the chi square. The level of statistical significance was set at 5% ( $p < 0.05$ ).

### RESULTS

The mean age of respondents was  $34.18 \pm 13.058$  years, 140 (44.6%) of the respondents were females while the remaining 174 (55.4%) were males. The occupational status of the respondents, using the International Standard Classification of Occupations (ISCO), showed that; 60 (19.1%) of the respondents worked under the sales and services industries, 41 (13.1%) worked in craft related industries, while 30 (9.6%) worked as plants and machine operators/ assemblers. 11 (3.5%) worked with the skilled agricultural, forestry and fishery industries. Only 5 (1.6%) worked as technical and associated professionals. Three (1%) were clerical support workers. 29 (9.2%) professionals, while 7 (2.2%) worked as armed forces or security. The remaining 119 (37.9%) of the respondents were students, unemployed house wives or unspecified civil servants. Furthermore, 130 (41.4%) of the respondents belonged to the Benin and Igbanke ethnic group, 58 (18.5%) belonged to the Esan/Etsako and Ora related ethnic group, while 50 (15.9%) of the respondents belong to the Ibo speaking ethnic groups. 44 (14%) of the respondents belonged to the Urhobo related ethnic group, 21 (6.7%) of the respondents were from the Yoruba speaking ethnic group whereas 11 (3.5%) of the respondents belonged to other

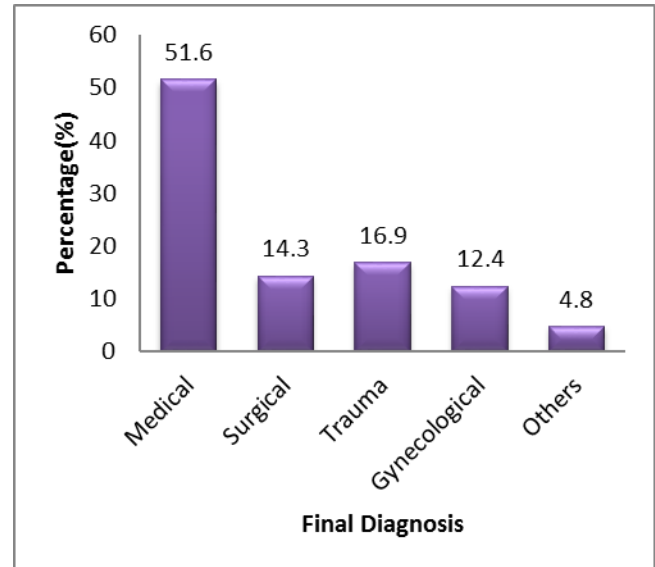
ethnic groups. Fifty-four percent (54%) of the respondents completed secondary education, while only 5% of the respondents had no formal education. Twenty-five percent of the respondents completed tertiary education, while the remaining 16% had only primary education. Two hundred and sixty nine (85.7%) respondents were Christians, 22 (7.0%) were of the African Traditional Religion, whereas 17 (5.4%) of the respondents were of the Islamic sect; while the remaining 6 (1.9%) belonged to other forms of religion. The average wait time of patients in the study was 1 hour 11 minutes  $\pm 0.38$  (71 minutes). About half, 146 (46.5%) of the respondents were satisfied with the care they received at the emergency department of the University of Benin Teaching Hospital, similar figure, 148 (47.1%) of the respondents were dissatisfied with the care provided to them. The remaining 20 (6.4%) of the respondents were undecided about their level of satisfaction with the care given them. The major reason given for dissatisfaction by the respondents was delays at various points of care. Ninety-three (61.2%) of the 152 respondents who were dissatisfied, listed delays at the ambulance bay, delays in retrieving investigation results, as well as delays before being attended to by the doctor as reasons for their dissatisfaction. Other reasons given for dissatisfaction included: lack of privacy, inadequate attention, poor staff attitude and high cost of services. Medical conditions accounted for the reason for the index visit by majority of the respondents, 139 (44.3%); while 93 (29.6%) were trauma related (accidents & burns).

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**Table 1: Socio-Demographic Characteristics of respondents**

Variables	Frequency (N - 314)	Percentage (%)
<b>Age Group</b>		
<10yrs	5	1.6
11-20yrs	27	8.6
21-30yrs	119	37.9
31-40yrs	88	28.0
41-50yrs	40	12.7
51-60yrs	24	7.6
61yrs and above	11	3.5
<b>Sex</b>		
Female	140	44.6
Male	174	55.4
<b>Occupation</b>		
Armed Forces/Security	7	2.2
Manager	9	2.9
Professionals	29	9.2
Technical and associated	5	1.6
Professionals	3	1.0
Clerical Support	3	1.0
Service and Sales	60	19.1
Skilled Agric, Forestry and Fishery	11	3.5
Craft related trades	41	13.1
Plant and Machine	30	9.6
Operator/Assemblers	30	9.6
Others	119	37.9
<b>Ethnicity</b>		
Benin/Edo/Igbake	130	41.4
Esan/Etsako/Ora/Ososo/Igara	58	18.5
Ihobo/Itsekiri/Itsoko/Ijaro	44	14.0
Ibo/Agbor/Ika/Kwale	50	15.9
Yoruba	21	6.7
Others (Efiki, Calabar)	11	3.5
<b>Educational status</b>		
No formal education	16	5
Completed primary education	50	16
Completed secondary education	170	54
Completed tertiary education	78	25
<b>Religion</b>		
Christianity	269	85.7
African Traditional Religion	22	7.0
Islam	17	5.4
Others	6	1.9

**FIGURE 1: DIAGNOSIS MADE AFTER EVALUATION OF RESPONDENTS IN EMERGENCY ROOM**



**TABLE 2: LEVEL OF SATISFACTION OF RESPONDENTS**

Overall level of satisfaction	Frequency	Percent (%)
Very Dissatisfied	33	10.5
Dissatisfied	115	36.6
Undecided	20	6.4
Satisfied	115	36.6
Very Satisfied	31	9.9
<b>Total</b>	<b>314</b>	<b>100.0</b>

**TABLE 3: REASON FOR DISSATISFACTION**

Reasons for dissatisfaction	Frequency n=152	Percent (%)
Delays	93	61.2
Feels neglected	31	20.4
Lack of privacy	9	5.9
High cost	5	3.3
Poor staff attitude	7	4.6
Do not know my doctor	3	1.9
Doctors hard to reach	2	1.3
No improvement	1	0.7
Untidy environment	1	0.7
<b>Total</b>	<b>152</b>	<b>100.</b>

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**Table 4: Estimated Wait Time of the Respondents**

Wait Time	Frequency	Percent (%)
Non-respondents	68	21.7
≤30mins	19	6.1
31-60mins	74	23.6
61-90mins	91	29.0
91-120mins	36	11.5
120-150mins	18	5.7
151-180mins	5	1.6
181-210mins	3	1.0
<b>Total</b>	<b>314</b>	<b>100.0</b>

**Mean Wait Time = 01:11±00:38 Hours**

### DISCUSSION

All respondents who agreed to participate in the study actually did, giving a 100% response rate. A total of three hundred and fourteen respondents participated in the study. About half, 146 (46.5%) of the respondents were satisfied with the care they received at the emergency department of UBTH, similar figure, 148 (47.1%) of the respondents were dissatisfied with the care provided to them. The remaining 20(6.4%) of the respondents were undecided about their level of satisfaction with the care given them. This was at variance with a study at Aminu Kano, Nigeria; in which Iliyasu et al found that 83% of the patients were satisfied with the services rendered to them at that hospital while the remaining 17% were dissatisfied.<sup>6</sup> The average wait time of patients in the study was 1 hour 11 minutes ± 0.38 (71 minutes). This is similar to findings in Tata main hospital Jamshedpur (58.6 minutes) and at the University College Hospital Ibadan, Nigeria (73.9 minutes).<sup>7</sup> The findings is at variance with a

similar study done earlier in the same institution where the average wait time was found to be 2hours 53 minutes (173 minutes).<sup>8</sup>

The reason for the seemingly shorter wait time in this study could be as a result of the triage protocol put in place at the Emergency Department of the University of Benin Teaching Hospital in which patients with dire emergency, bypass the usual protocol of ward-clerk to revenue -to medical records before being eventually seen by a doctor after vital signs have been taken by a nurse. The study also showed that there was more time lapse between the nurses' vital signs assessments and the doctors' assessment than between the patients' arrival and the nurses' assessment of vital signs. The longer average doctors' wait time could also be as a result of the fact that the doctor has to select which patient to see before the other based on the initial triage by the triage team. Majority of the respondents, 269 (85.7%) were Christians, followed by 22 (7.0%) who were of the African Traditional Religion. This may be due to the fact that the hospital location is in a predominantly Christian community. Medical conditions accounted for the reason for the index visit by majority of the respondents, 139 (44.3%); while 93 (29.6%) were trauma related (accidents & burns). This is at variance with a similar study done in Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria; where 62% of the respondents and 37.2% were surgical and medical emergencies respectively.<sup>9</sup> The difference may be due to the time (season) of the year when the studies were carried out. It is generally believed that more road traffic crashes occur during the last three months of the year. This is often referred to as the "EMBER" months (September, November and December).<sup>10</sup> Majority of the respondents were satisfied with doctors' helpfulness, courtesy, concern about patients, as well as their skills. This is similar to the findings of Sadiku et al in Kuwait; where the Physician's consultation skills were considered to be the core of patients' satisfaction.<sup>11</sup>

Thirty-five (24.6) of the 146 respondents who were satisfied with the care received in the emergency department of the UBTH were happy

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with the good services they received, as they also reported the fact that their conditions had improved tremendously while receiving care at the ER. Ariba et al reported similar results; in which they reported that majority of patients who received care in their A& E perceived the quality of care they received as satisfactory.<sup>9</sup> Similarly, Umar et al in a study in Sokoto, Nigeria deduced that over half of their respondents rated the service delivery in that tertiary hospital as satisfactory.<sup>12</sup> The major reason given for dissatisfaction by the respondents was delays at various points of care. Ninety-three (61.2%) of the 152 respondents who were dissatisfied, listed delays at the ambulance bay, delays in retrieving investigation results, as well as delays before being attended to by the doctor as reasons for their dissatisfaction. Other reasons given for dissatisfaction included: lack of privacy, inadequate attention, poor staff attitudes and high cost of services. Bolaji et al outlined in a similar study the following as major reason for dissatisfaction: slow response time at laboratories, X-ray centers and delay in interventions.

The association between wait time and respondents' level of satisfaction with the doctors in the emergency room of UBTH was however not statistically significant ( $P=0.002$ ). This was at variance with a similar study carried out by Umar et al, who reported that more patients who expressed satisfaction with services spent less time (<30minutes) for consultation compared to those who were dissatisfied; though this was found not to be statistically significant ( $P=0.134$ ).<sup>12</sup>

In conclusion, the overall impression of the respondents on patient care in the emergency room of the University of Benin Teaching Hospital is that, they were fairly satisfied with the care delivered to them at the department. The average wait time from the study was relatively lower than values obtained in other similar studies; probably because of the more objective means devised by the researchers for estimating wait time. The study further showed that there is a significant level of association between patients'

wait time and their level of satisfaction with whatever care they receive from any health care point.

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