

Research Article

Patient Waiting and Consultation Time in the General Practice Clinic of the University of Benin Teaching Hospital, Edo State, Nigeria

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• General Practice Clinic; Medical doctor; Patient waiting time

Abstract

Background: Waiting time is an important indicator of patient satisfaction and the operational effectiveness and efficiency of a health facility. This study assessed patient waiting and consultation time in the General Practice Clinic of the University of Benin Teaching Hospital as well as assessed the association between waiting time and patient satisfaction with care received.

Materials and Methods: This was a cross-sectional analytic study conducted in the General Practice Clinic of University of Benin Teaching Hospital, Nigeria. Analysis was done using Chi-square test, Mann Whitney U test, Kruskal Wallis test to test the association between waiting and consultation times with care satisfaction. We used binary logistic regression to evaluate the independent predictors of care satisfaction.

Results: A total of 336 participants were recruited for the study. Participants comprised of 216 females and 120 males. The waiting time spent by the patients before they had their first contact with the medical doctor ranged from 11-354 minutes with a mean of 146.75 ± 55.38 minutes. The consultation time ranged from 3-88 minutes with a mean of 22.43 ± 12.12 minutes. Those who rated the medical care as poor were observed to have had longer waiting time (mean waiting time of 219.88 ± 65.95 minutes). While, those who rated the medical care received as excellent had the highest mean consulting time of 25.57 ± 13.23 minutes.

Conclusion: Compared to the recommended average patient waiting time of 30 minutes, patient waiting time in this study was prolonged and was a significant independent predictor of satisfaction with medical care.

However, the consultation time was close to the recommended average consultation time of 15 minutes. This study advocates the need for future studies to assess the reasons responsible for the prolonged waiting time in order to provide remedial solutions aimed at improving the quality of care rendered to patients.

INTRODUCTION

Waiting time refers to the time a patient waits in the clinic before being seen by one of the clinic medical staff [1]. It is an important indicator of the operational effectiveness and efficiency of a health facility, and therefore the quality of healthcare services delivered by a facility [2].

Whereas the Institute of Medicine (IOM) recommends that, at least 90% of patients should be seen within 30 minutes of their scheduled appointment time [3], it has been observed that long patient waiting times occur in both developed and developing countries, even though it may vary between countries, within a country, and from one health facility to another in the same geographic area [4-6].

Further, the British Medical Association (BMA) has recommended that the average duration of consultation in outpatient departments should be approximately 15 minutes per patient [7]. This recommendation was borne out of the disparity in the patient to doctor ratio and the "patient flow", which represents

the ability of the health care system to serve patients quickly and effectively as they move through various stages of care.

Waiting time has been demonstrated to be a determinant of patients' level of satisfaction with a medical practice or services delivered by a health facility [8]. Indeed, some studies have shown that there is an association between clinic waiting time and patients' satisfaction with healthcare services received [4,9,10].

Various factors such as staff shortages, misfiling of patient records, delay in commencing consultations and simultaneous break times [11], have been adduced for the long waiting time. However, the absence of a time-specific appointment system has been identified as a major contributor to the long waiting time [8,12].

In Nigeria, where this study was conducted, it is typical to find long waiting times in the outpatient clinics of most health facilities [5,11,13-15]. Previous studies have assessed waiting time in Northern Nigeria [11,13], and in children emergency depart-

ment [5], with paucity of studies in Southern Nigeria and among adult patients. In general, these studies have reported waiting times that were higher than the IOM recommendations. Specifically, the Nigerian studies found that large number of patients waiting to see relatively few doctors, scheduling problems and delays caused by hospital bureaucratic bottlenecks were major contributing factors for the prolonged waiting time. Giving the wide disparity in distribution of human resources for health that exist between the different regions of Nigeria [16], as well as the socio-cultural and religious differences that exist between Northern and Southern Nigeria, and the possible influence they can have on health seeking behaviour, the need for this study became imperative. This study therefore, was designed to assess patients' waiting and consultation time in the General Practice Clinic of the University of Benin Teaching Hospital (located in Edo State in the South South region of Nigeria), as well as to assess a potential association between waiting time, consultation time and patient satisfaction with medical care received. Findings from this study are expected to inform and assist the current efforts at reforming Nigeria's health system and improving overall patient experience in health facilities.

MATERIALS AND METHODS

This was a cross-sectional analytic study that included adult patients attending the General Practice Clinic of University of Benin Teaching Hospital (UBTH), Edo State, Nigeria. The study was conducted within 14 working days in the month of December, 2017. The teaching hospital, founded on May 12, 1973 [17], is a 600 bed federal tertiary hospital located in Benin City, Edo State, Nigeria. The hospital's service is patronized by people in the immediate and neighbouring communities and states.

The General Practice Clinic of the University Of Benin Teaching Hospital (UBTH) where this study was conducted is an outpatient clinic through which patients majorly access the hospital and form their opinions and impressions about the quality of services offered by the hospital. It is majorly run by Family Physicians who offer comprehensive, continuous, coordinated and integrated care to patients, and refer those in need of further specialist intervention to medical and dental consultants in other specialty departments of the hospital.

Malaria, essential hypertension and upper respiratory tract infection constitute the most treated conditions in this clinic accounting for 15.9 %, 4.2% and 3.9% of consultations respectively. Seasonal variations in clinic attendance have been noted with the highest attendance of new patients recorded in the summer (July and August). The month of December is one of the months with the least record of new patients as the clinic is less busy with most personnel not on vacation, hence the choice for the period of the study.

From the clinic's available records, an average of 160 new patients are usually seen daily in the clinic during the working days (Monday-Friday) resulting in a doctor- patient ratio of 1 doctor to 16 patients. A minimum sample size of 330 was calculated for the study using the formula $nf = n/1 + (n/N)$ where $n = z^2pq/d^2$ [18], while a sampling interval of 7 was derived.

N = estimated population size (2,240),

nf = desired sample size for population less than 10,000,

n = desired sample size for population greater than 10,000,

z = standard normal deviate at 95% confidence interval = 1.96

p = prevalence of the factor under study (50% was used in this study)

q = 1.0- p

d = tolerable margin of error = 5%

Using a systematic random sampling technique in which the first participant was selected by simple random sampling and every seventh participant (based on the calculated sampling interval) subsequently recruited into the study, 24 participants were recruited daily during the weekly (Monday-Friday) consultation clinics in the General Practice Clinic (GPC) until the estimated sample size of 330 was reached.

Ethical approval was sought and obtained from the University of Benin Teaching Hospital Ethics and Research committee before commencement of the study (Protocol number: ADM/E22/A/VOL.VII/14551). Written informed consent was also obtained from all participants after intimating them on the objectives, procedures, benefits of the study and also their risks and rights as participants.

The data collection instrument was a pretested questionnaire which consisted of four sections. The first section sought information on socio-demographic characteristics of the participants. The second section assessed information on the participants' expectation with regard to waiting and consultation times. The third section involved recording by a research assistant of the time spent in the waiting area of the General Practice Clinic (GPC) before consulting a medical doctor as well as the time spent consulting a medical doctor in the consulting clinic (i.e. consultation time with a medical doctor) and the fourth section assessed patients' satisfaction with the medical care received.

The questionnaire was administered by research assistants who had been trained to collect the data. The first, second and fourth sections of the questionnaire were direct responses from the participants. However, the research assistants employed the use of a stop watch to record the required times for section 3 in minutes.

In this study, we had three primary variables of interest (waiting time, consultation time, level of satisfaction with care). Waiting time (minutes) was defined as the time the patient spent in the waiting area of the General Practice Clinic of U.B.T.H before entering the medical doctor's consulting room to have his/her first contact with the medical doctor (i.e. from the time of arrival in the waiting area of the General Practice Clinic to the time he/she made his/her first contact with the medical doctor). Consultation time was defined as the time spent by the patient with a medical doctor in the consulting room. Patient' satisfaction with care received was categorized as poor, fair, good, very good, excellent and unsure. In addition, the following variables were included for adjustment: gender, age, education (no formal education, primary education only, secondary education and tertiary education); monthly income.

The data generated from the study was analysed using the Statistical Package for Social Sciences version 21.0 (Chicago, IL, USA) and Microsoft Excel 2010. Normality of the variables waiting time and consultation time was assessed using the Fisher's approach. Because the variables were not normally distributed the Mann Whitney U and the Kruskal Wallis non-parametric tests were used to test for univariate associations between waiting time or consultation time and satisfaction with care received. Cross-tabulations were also carried out with Chi-square test used to compare proportions. The level of statistical significance was set at 95% confidence interval. The binary logistic regression model was constructed to identify significant independent predictors of satisfaction with medical care received among the participants. For the purpose of this analysis patient satisfaction with care was grouped into two. Poor, fair and unsure was grouped as one and good, very good and excellent as the second group. The category used as the reference category was the good/very good and excellent group. The independent variables in the model were specified based on possible association with patient satisfaction and waiting and consultation time and included: gender, age, education, and income. They were entered into the model using the simultaneous approach. Confidence interval around the effect estimates (odds ratio) was calculated at the 95% confidence level.

RESULTS

A total of 336 adult participants were recruited for the study. Participants comprised of 216 females and 120 males with a male to female ratio of 1:1.8. The participants' age ranged from 18-87 years, with their mean age being 42.35 ± 16.41 years. The most prevalent age group was the 25-34 year age group accounting for 27.1% of the participants.

The Benins accounted for almost half (49.7%) of the participants followed by the Esans (15.8%) while the Ibos (11.9%) were the most represented of the three major ethnic groups in Nigeria. About a third (33.0%) of participants had the highest level of education attained being secondary education. Most (62.2%) of the participants were self-employed and 11.9% were public service employees. About a quarter (25.3%) of the participants had no monthly income while 26.2% had monthly income less than \$50 and 10.1% had monthly income greater than \$150. The majority (95.2%) of the participants were christians. The unmarried (single) accounted for 29.5% of the participants while 61.6% were married (Table 1).

The waiting time in this study ranged from 11-354 minutes with a mean waiting time of 146.75 ± 55.38 minutes and median of 139 minute. Most (66.1%) of the patients waited for more than 120 minutes before seeing a medical doctor while only 0.6% of the patients had a waiting time of 30 minutes or less.

Figure 1 depicts the expected and actual recorded waiting time among the participants. About half (49.1%) expected waiting time to be less than 30 minutes. However, this was not the case as 99.4% of the participants actually spent over 30 minutes waiting to be seen by a doctor.

Whereas the total time spent consulting a medical doctor ranged from 3-88 minutes (mean of 22.43 ± 12.12 minutes), a little more than half of the participants (50.9%) spent 16-30 min-

Table 1: Socio-demographic characteristics of participants attending the University of Benin Teaching Hospital clinic.

Characteristic	Frequency	Percent
Gender		
Male	120	35.7
Female	216	64.3
Age Group (years)		
<24	41	12.2
25-34	91	27.1
35-44	76	22.6
45-54	43	12.8
55-64	44	13.1
>64	41	12.2
Ethnic Group		
Benin	167	49.7
Esan	53	15.8
Etsako	15	4.5
Ibo	40	11.9
Hausa	4	1.2
Yoruba	14	4.2
Other ethnic groups	43	12.8
Level of Education		
No formal education	32	9.5
Primary	66	19.6
Secondary	111	33.0
Tertiary	127	37.8
Occupation		
Student	44	13.1
Self employed	209	62.2
Public service employee	40	11.9
Unemployed	36	10.7
Private service employee	7	2.1
Monthly Income		
None	85	25.3
<\$50	88	26.2
\$50-\$99	73	21.7
\$100-150	56	16.7
>\$150	34	10.1
Religion		
Christianity	320	95.2
Islam	5	1.5
African Traditional Religion	7	2.1
Others	4	1.2
Marital status		
Single	99	29.5
Married	207	61.6
Widowed	22	6.6
Separated/Divorced	8	2.4
TOTAL	336	100.0

utes consulting a medical doctor, 19% of the patients spent more than 30 minutes consulting a medical doctor, while 30.1% of the respondents spent 15 minutes or less consulting a medical doctor.

Figure 2 shows the expected and recorded consultation time

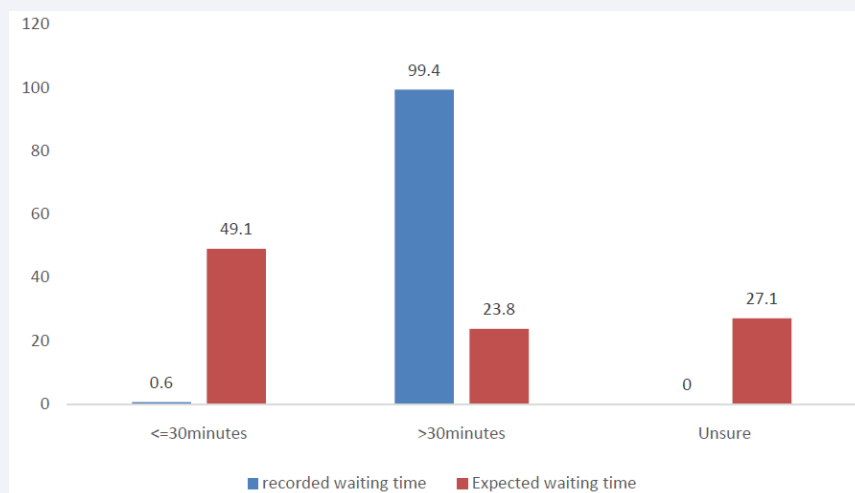


Figure 1 Recorded Vs expected waiting time before seeing a Medical doctor among the respondents.

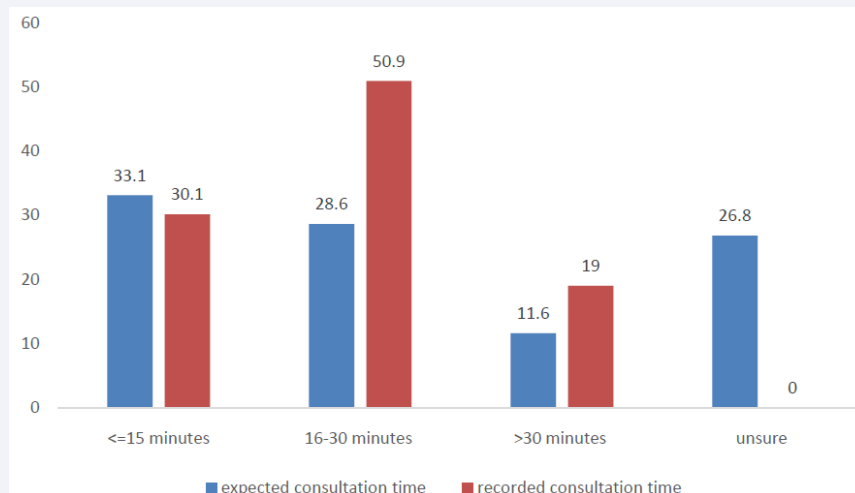


Figure 2 Expected Vs recorded consultation time among the respondents.

among the participants. About a third (33.1%) of the participants expected to spend less than 15 minutes consulting with a doctor while the recorded consultation time showed that 30.1% of the participants actually spent less than 15 minutes consulting a doctor. About half (50.9%) of the respondents spent over 15 minutes consulting with a doctor, a proportion which was higher than the proportion of those who expected to spend more than 15 minutes consulting with a doctor (28.6%).

Table 2 shows that majority of the participants were satisfied with the level of medical care received, with more than half (53.3%) rating the medical care received as good, 14.9% as very good and 2.1% as excellent. Those who rated the medical care as poor were observed to have spent more time waiting to consult the medical doctor (mean waiting time 219.88 ± 65.95 minutes; median waiting time 218.50 minutes). The distribution of waiting time was not the same across the medical care rating categories and this was statistically significant ($p=0.008$). On the other hand, those who rated the medical care received as excellent spent more time consulting with the doctor (mean consulting

time 25.57 ± 13.23 minutes; median consulting time 26 minutes). The distribution of consultation time was the same across the medical care rating categories ($p=0.882$) (Table 3).

Table 4 shows that though patients who came early in the morning had a lower waiting time versus those who came later, this difference was not statistically significant. Therefore, we did not find an association between the arrival time of patients and the waiting time before consulting a medical doctor.

The Cox & Snell R square was 0.035 while the Nagelkerke R square was 0.050 showing that between 35.0% and 50.0% of the variability in the dependent variable (satisfaction with medical care received) is explained the model in this study. Logistic regression showed that waiting time was a significant predictor of satisfaction with medical care; with a minute increase in waiting time there was a 0.5% decrease in care satisfaction ($p=0.045$). With a unit increase in consultation time there was slight increase in level of satisfaction with care. Male respondents were 1.078 times more likely to be satisfied with the medical care they received compared to their female counterparts. With a year in-

Table 2: Level of satisfaction with medical care received among participants attending the University of Benin Teaching Hospital clinic.

Level of Satisfaction with medical care received	Frequency	Percent
Poor	8	2.4
Fair	71	21.1
Good	179	53.3
Very Good	50	14.9
Excellent	7	2.1
Indifferent	21	6.3
TOTAL	336	100.0

Table 3: Association between rating of medical care received and waiting time as well as consulting time among the participants.

Rating	Frequency	Mean waiting time (minutes) p=0.0081	Mean consulting time (minutes) P=0.882
Poor	8	219.88±65.95	23.63±10.30
Fair	71	147.28±54.36	22.76±12.73
Good	179	140.56±53.60	22.42±12.94
Very good	50	148.54±58.11	21.56±10.34
Excellent	7	151.43±45.30	25.57±13.23
Unsure	21	164.05±47.38	21.95± 6.64
Total	336	146.75±55.38	22.43±12.12

Table 4: Relationship between arrival time of patients and waiting time to consult a medical doctor among the participants.

Time of arrival	Frequency	Mean	SD	SE
Within 1 st hour of resumption (8.00 – 8.59a.m.)	195	59.72	40.04	2.87
9a.m. and beyond	141	63.60	41.32	3.48

P= 0.14

Table 5: Logistic regression model to identify predictors of participants' satisfaction with care received.

Characteristics	B	P value	Odds ratio	Confidence interval
Waiting time	-0.005	0.045	0.995	0.991-1.000
Consultation time	0.001	0.926	1.001	0.981-1.021
Gender				
Male	0.075	0.772	1.078	0.648-1.792
Age	-0.001	0.925	0.999	0.984-1.015
Education				
No formal	-0.136	0.759	0.873	0.365-2.087
Primary education	0.242	0.564	1.274	0.626-2.590
Secondary education	0.682	0.030	1.978	1.070-3.655
Monthly income				
None	-0.028	0.951	0.972	0.393-2.402
<\$50	-0.123	0.791	0.884	0.355-2.200
\$50-\$99	0.280	0.555	1.323	0.522-3.349
\$100-\$150	0.173	0.722	1.189	0.458-3.085
Constant	1-271	0.049	3.564	

Reference variables: Female, tertiary education, >\$150 monthly income

crease in age of the respondents there was a 0.999 likelihood of being dissatisfied with the medical services received. Respondents with no formal education were 0.873 times more likely to be dissatisfied with the medical care received compared with respondents who had attained tertiary education. Respondents who had attained secondary education were 1.978 times more likely to be satisfied with the medical care received compared to respondents with tertiary education and this was statistically significant (p=0.030) while participants who had a primary education were 1.274 times more likely to be satisfied with the medical

care received compared to respondents with tertiary education though this was not statistically significant (0.564). Participants in the group with no income or those with incomes less or equal to \$150 were more likely to be dissatisfied with the medical care received compared to those whose monthly income was >\$150 (Table 5).

DISCUSSION

This study sought to determine patient waiting time and consultation time as well as evaluate the effect of patient waiting

time and consultation time on self-assessed level of satisfaction with medical care received. In this study, patient waiting time was prolonged while patient consultation time was adequate when compared to the recommended patient waiting and consultation times. In multivariable analyses patient waiting time was a significant independent predictor of patients' satisfaction with medical care received.

Public hospitals in Nigeria tend to be patronised more by females and those who attained secondary education [19], a finding similar to that observed in this study. Affordability of health care service [19], availability of more qualified personnel and more genuine drugs [20], in public hospitals compared to private health facilities may be contributory to this. This relative affordability of health care services may also be contributory to the higher proportion of clients who earned less than \$150 monthly or had no monthly income as observed in this study.

Service quality is a measure of the degree of discrepancy between client's perception and expectations [19]. The expectations of the participants in this study with regard to consultation time were close to the actual consultation time. This may encourage the clients to return and probably recommend the clinic to others as it has been demonstrated that pre-clinic/treatment expectations tend to make patients repeat a clinic visit or not visit the clinic again [20].

The expectations of the participants in this study with regard to waiting time was similar to that recommended by the Institute of Medicine (IOM) that at least 90% of patients should be seen within 30 minutes of their scheduled appointment time [3]. However, this expectation was not met as most participants spent longer waiting times than they expected. Perceived performance of a health facility has been shown to directly influence to a greater degree clients' satisfaction [20].

The availability of highly qualified personnel in the clinic coupled with the relatively cheaper cost of accessing public hospitals, may explain why citizens/patients flood the General Practice Clinic of the public hospital where this study was conducted. With the average number of new patients seen daily in the clinic in this study being 160 with a doctor-patient ratio of 1 doctor to 16 patients, the prolonged waiting time found in this study may be due to the huge crowd of patients that daily besiege the clinic, in addition to the shortage of doctors to attend to the patients.

Ofili et al. [21], found that patients spend about 2-4 hours in the outpatient department before seeing a medical doctor, a finding similar to what was observed in this study where majority of the participants spent over 2 hours waiting before they could see a medical doctor. A previous Nigerian study [11], outlined the following as factors responsible for long waiting times: large number of patients waiting to see relatively few doctors, scheduling problems and delays caused by hospital bureaucratic bottlenecks. Delays due to clinical or administrative procedures have been reported to set in more distress among patients [20]. A situation which is unsatisfactory for efficient service delivery as hospitals exist to provide service to clients with client satisfaction being the top priority as they are major stakeholders in health care delivery [19].

In a study on patients' perception on timing hospital ap-

pointment as it affects waiting time, Eze et al. [22], observed that though the respondents felt it was necessary to time hospital appointments, they also felt that it was still necessary for every client to exercise patience while waiting to see a medical doctor.

Any blockage of patient flow can increase waiting time, creating unnecessary delay at the health facility before the patient receives care, thus having an impact on the health care outcomes [23].

The expectations of participants of this study with respect to consultation time is in consonance with the recommendation of the British Medical Association (BMA) [7], as a larger proportion of the participants expected to spend 15 minutes or less in the consulting room. However, the mean consulting time in this study was higher than the BMA recommended consulting time, but similar to the finding by Osundina et al. [24], in which a significant number of the respondents evaluated spent less than 30 minutes consulting with their medical doctors. The prolonged consultation time may be due to the severity of the illnesses occasioned by late presentation to the health facility which is a common experience in Nigeria [25-27].

In a study done at a General Outpatient Department in North-western Nigeria, Oche et al. [28], found a consultation time ranging from 1 to 25 minutes, which is similar to the findings from a previous study, where a range of 1-26 minutes was observed [29]. In like manner, a mean consultation time of 7 minutes and 3.4 minutes were recorded in previous studies [29], which are far lower than that recorded in this study. This difference may be due to the fact that these previous studies were undertaken in the Northern part of the country, in addition to the possibility of different pattern of presentations in the Northern part of the country as compared to the South. Furthermore, it may be attributable to the diverse socio-cultural and religious practices as well as disparity in literacy levels and inequality in human resources for health with possible lower doctor-patient ratio in Northern Nigeria compared to Southern Nigeria.

Waiting time is an important determinant of quality of services as it is noted that in health care provision, delays are expensive, not only in terms of direct costs incurred, but also in terms of the potential costs of decreased patient satisfaction and adverse outcomes [30].

The World Health Organization regards waiting time as an index used to assess patients' satisfaction and the effectiveness of a health facility in providing healthcare to healthcare consumers [31]. This is evident from the findings in this study as waiting time was a significant predictor of patients' satisfaction with the medical care received.

In this study, the respondents had a good level of satisfaction despite a longer waiting time. Worthy of note is the observation that a large number of the respondents who rated the care poor were those who spent more time waiting to consult their medical doctor. Conversely, respondents who on an average spent a relatively longer time consulting their medical doctor rated their level of satisfaction as excellent. Thus, it is possible that satisfaction is not only influenced by waiting time, but may include other factors, such as the quality of the interaction with the medical providers and other staff as well as the duration of the consulta-

tion. This finding is similar to other observations on waiting time and patients' satisfaction [32-34]. A recent study carried out at the outpatient departments of Mulago hospital found out that the overall satisfaction of patients with outpatient services was closely related to their satisfaction with waiting time [32]. Reducing outpatient waiting times has been the focus of a large number of studies [32,33], because waiting and treatment times are usually regarded as indicators of quality of service [32,34].

Patients' assessment of the adequacy of time has been suggested to be crucial in gauging their satisfaction with psychosocial issues during consultation [35]. Those who spent more time during consultation rated the medical care as excellent. This may be because the patients felt they were properly attended to, particularly as patients who visit the clinic for the first time are usually offered mandatory clinical medical examination with a detailed history obtained from them. It is also believed that the more time a patient spends during a consultation contributes to the patient's understanding of his illness, with a higher likelihood of the patient being satisfied with the consultation [25,36-38].

STRENGTHS

The strengths of this study include:

The use of a larger sample size compared to other Nigerian studies. The use of systematic random sampling in the recruitment of participants. The use of trained research assistants to record the waiting and consultation times. Also the use of stop watch to accurately determine the waiting and consultation times.

LIMITATIONS

The limitation of this study include:

The fact that the study did not include a section to look at the reasons why the waiting time was longer in this study, non-adjustment for seasonality with respect to its influence on waiting and consultation times as well as non-inclusion of the type of illness the patient consulted the doctor for, which have influenced waiting and consultation times.

CONCLUSION

This study concludes that though there are varying degrees of patient waiting time, the mean patient waiting time before consulting a medical doctor in the General Practice Clinic of the study area is prolonged and far longer than the recommended average patient waiting time of 30 minutes with waiting time being a significant predictor of patient's satisfaction with medical care received. Patients' perceived satisfaction with medical care received is a reflection of the consultation time. Longer consultation time tended to be associated with better rating of satisfaction with health care provided however, this was not statistically significant.

Recommendations

- 1) The conduct of further research on the possible causes of prolonged patient waiting time is recommended.
- 2) Research on waiting time during the different seasons of the year is recommended to see if there are any seasonal

variations

- 3) The continuous monitoring and research on patient waiting time is recommended.

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