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Evaluation of patient waiting times and satisfaction in outpatient in Douala, Cameroon

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Patient waiting time is a significant clinical care issue. This study assessed outpatient waiting times and patient satisfaction in Douala. A cross-sectional study was conducted in randomly selected health facilities in Douala from January 1st to March 31st, 2020. The study included 389 outpatients and 52 healthcare workers. The Chi-square test was used to analyze the association between the quality of care and patients' recommendations of the hospital, with a significance level set at less than 5%. Among the outpatients, the sex ratio was 0.76 (M/F), and the most represented age group was 20-40 years (170, or 43.70%). The mean patient waiting time to reach the hospital was 34.97±32.07 minutes. For registration, the mean waiting time was 47.61±52.05 minutes. The mean waiting time to meet healthcare workers was 84.68±79.68 min. The mean time spent at the outpatient department from registration to consultation was 150±50.02 min (2.5±0.62 h). There was a statistically significant relationship between the quality of healthcare received and the likelihood of patients recommending the hospital to others (p=0.00). Healthcare workers reported seeing between 10-20 patients daily (20, or 38.46%). According to the healthcare workers, the main causes of long patient waiting times were a lack of health workers (44, or 84.6%), lack and poor condition of equipment (36, or 69.23%), and non-compliance of outpatients with appointments or treatment (17, or 32.29%). Patient waiting times to access healthcare were very long. Healthcare providers should adhere to scheduled working hours and be more welcoming to patients.

Key words: Outpatient, Waiting time, Patient satisfaction, quality of care, healthcare workers, Douala.

INTRODUCTION

Patient waiting time is a significant public health problem affecting health systems in both developed and developing countries (Ahmad et al., 2017). Services offered by the Outpatient Department (OPD) are critical

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as they handle the largest number of patients who first visit due to the affordability of healthcare in this department. The OPD is where patients receive diagnosis and treatment without overnight stays (Anil et al., 2016; Vaishali and Soundara, 2017; Patel and Patel, 2017; Apichart et al., 2018). Approximately 8 to 10% of OPD patients may need hospitalization (Ta et al., 2013; Adamu and Oche, 2014; Rashmi, 2017; Melesse et al., 2017).

Patient Waiting Time (PWT) is a crucial indicator of the operational effectiveness and efficiency of a healthcare unit as well as the quality of healthcare services delivered. It should be addressed as part of good management practice (Rashmi, 2017; Melesse et al., 2017; Ndukwe et al., 2011; Oche and Adamu, 2013; Mohebbifar et al., 2014; Enabulele et al., 2018). According to the World Health Organization (WHO), PWT is a key measurement of a responsive health system, yet it is among the least studied and understood metrics (Apichart et al., 2018; Ulfa et al., 2017; Al-Harajin et al., 2019). Delays and long patient queues result from an imbalance between the demand for services and healthcare supply. When demand exceeds supply, patients experience wait times. Long PWT is associated with inefficiencies in healthcare delivery, dissatisfaction among patients, and discomfort (Anil et al., 2016; Apichart et al., 2018).

Patient satisfaction is crucial in any healthcare system as it significantly impacts the utilization of healthcare services (Aswar et al., 2014; Al-Harajin et al., 2019). Many studies have shown an inverse relationship between wait times and patient satisfaction, which reflects the efficiency of the healthcare facility (Oche and Adamu, 2013; Aswar et al., 2014; Bleustein et al., 2014; Ahmad et al., 2017; Melesse et al., 2017; Patel and Patel, 2017; Al-Harajin et al., 2019). The International Organization for Migration recommends that at least 90% of patients be seen within 30 min of their arrival at a healthcare facility. However, in developing countries, patients often wait an average of 2-4 h before seeing a doctor (Oche and Adamu, 2013; Mohebbifar et al., 2014; Anil et al., 2016; Melesse et al., 2017; Ulfa et al., 2017; Al-Harajin et al., 2019; Ukizentaburuwe et al., 2021; Biya et al., 2022). Additionally, the British Medical Association (BMA) recommends that the average consultation time per patient in the OPD should be approximately 15 minutes (Enabulele et al., 2018).

In Cameroon, PWT is not well-documented. Although the Ministry of Public Health promotes the humanization of care, it is not clearly included or clarified in health policy. Given the importance of PWT as a measure of quality, equity, patient satisfaction, and access to healthcare services, this study aims to determine PWT in hospitals in Douala and assess the relationship between waiting time and patient appreciation of the quality of care provided. Recommendations will be made to improve PWT if necessary.

MATERIALS AND METHODS

A cross-sectional study was conducted in Laquintinie Hospital, Douala; General Hospital, Douala; Logbaba District Hospital; and Cité des Palmiers District Hospital. These hospitals were randomly selected. The study was carried out over three months, from January 1st to March 31st, 2020. All patients visiting the OPD of these healthcare facilities and who agreed to participate were included in the study. For patients younger than 18 or those unable to read or write, a parent or guardian completed the survey on their behalf. Patients aged 18 and older participated in the study themselves. Medical and hospital staff was also included through simple random selection. Participants needed to be willing to take part in the study.

The sample size was calculated using Lorentz's formula, with a prevalence (p) of 50% used due to the unknown prevalence of the factor being studied. The minimum sample size was determined to be 384 outpatients. Ethical clearance was obtained, and all ethical considerations were respected.

The OPD was defined as the part of the hospital equipped with physical facilities and staffed with medical personnel working regular hours to provide care for patients not registered as in-patients (Anil et al., 2016; Apichart et al., 2018).

Patient Waiting Time (PWT) was defined as the duration from when the patient enters the OPD to the time the patient leaves (Ta et al., 2013; Anil et al., 2016; Patel and Patel, 2017). Patient satisfaction was measured by the extent to which a patient is content with the quality of care and their appreciation of their desires and expectations of healthcare (Bleustein et al., 2014).

A structured questionnaire was used to collect data from both patients and hospital staff. The questionnaire was divided into two parts:

One: Focused on socio-demographic variables, including patient age, sex, residence, occupation, marital status, and the name of the healthcare facility.

Two: For patients, this included open-ended questions about their experiences at the OPD. It covered services requested, whether they were new or returning patients, the number of previous OPD visits within the last twelve months, the purpose of their visit, time taken to reach the OPD, means of transportation, quality of reception, healthcare provider requested, registration time, wait time before seeing the requested healthcare provider, effects of wait time on patient health, consultation time, quality of healthcare received, and likelihood of recommending the facility to others. For healthcare staff, Section Two gathered information on their daily experiences with patients, including the average number of patients seen per day, perceived causes of long wait times, ideal wait times, effects of wait times on healthcare, and suggestions for reducing patient wait times.

The questionnaire was pre-tested in the hospitals where the survey was conducted to avoid administrative bottlenecks. Corrections were made to improve clarity and understanding for both patients and healthcare staff. During the administration of the questionnaire, each participant was carefully briefed on the study's objectives, including the expected outcomes and their potential impact on both patients and the healthcare system in Cameroon. Participants were informed about how the results would be used to improve healthcare delivery in Cameroon and were then asked to freely sign a consent form to participate in the study.

The questionnaire was distributed to patients and healthcare staff who agreed to participates, with the assistance of trained research assistants. The patients were followed by the investigator, a 7th-

Table 1. Socio-demographic distribution of the study population in Douala reference's hospitals.

Variable	Modality	Number (N)	%
Gender	Male	163	41.90
	Female	226	58.10
Age group (in years)	<10	56	14.39
	[10; 20]	35	8.99
	[20; 40]	170	43.70
	[40; 60]	83	21.34
	[60; 80]	40	10.27
	>80	5	1.29
Residence	Douala 1	22	5.66
	Douala 2	43	11.05
	Douala 3	145	37.28
	Douala 4	25	6.43
	Douala 5	150	38.56
	Other	4	1.03
Profession	Unemployed	62	15.94
	Student	116	29.82
	Worker	178	45.79
	Retired	33	8.48
Marital status	Married	159	40.87
	Single	191	49.10
	Divorced	15	3.86
	Widower	24	6.17
Health facilities	Laquintinie hospital	92	23.65
	General hospital	98	25.19
	Logbaba district hospital	107	27.51
	Cité des palmiers district hospital	92	23.65

year medical student, from the time they arrived at the hospital until they left the office of the requested healthcare provider. A stopwatch was used to record all time spent in the OPD, divided into three parts: registration time, wait time to see the healthcare provider, and consultation time.

Data analysis was performed using the Statistical Package for Social Sciences (SPSS) Version 26. Descriptive analysis of the sample population included representing quantitative variables as mean, median, and standard deviation. These variables covered socio-demographic information and the time taken by patients to arrive at the OPD. Time spent at the OPD, from registration to exit, was recorded for each healthcare facility. Patient feedback, collected through the questionnaire, assessed the impact of waiting time on health, the quality of healthcare received, and whether patients would recommend the healthcare facility to others.

The Chi-square test was used to determine the existence of relationships between qualitative variables, with a significance level of <5% and a confidence interval of 95%.

RESULTS

Out of a total of 426 patients and 56 healthcare workers, 37 patients and 4 healthcare workers were excluded, resulting in 389 patients and 52 healthcare workers participating in the study. Therefore, the response rate was 91.5% (441/482 patients).

The gender distribution was 163 men (41.90%) and 226 women (58.10%), giving a sex ratio of 0.72. The mean age of the participants was 33.19 ± 19.70 years. The largest age group was 20-40 years, with 170 participants (43.70%). The majority of participants, 150 (38.56%), were from Douala 5, while 226 participants (58.10%) were female. Of the healthcare workers, 178 (45.79%) had a regular position (contractual/civil servants). Additionally, 191 participants (49.10%) were single, and 107 participants (27.5%) were consulted at Logbaba District Hospital, shown in Table 1.

Most patients, 238 (62.2%), took less than 15 min to reach the hospital. At the registration station, 114 patients (29.3%) spent approximately 15 to 29 min, shown in Table 2. The majority of patients waited between 15 and 29 min for effective consultation, with 87 patients (22.3%).

Table 2. Time for travel to Douala reference's hospitals, registration, waiting consultation, and consultation of participants.

Time	Travel to the hospital [Number (%[1])]	Registration [Number (%)]	Waiting consultation [Number (%)]	Consultation effective (%)
Less than 15 min[2]	238 (62.2)	77 (19.8)	40 (10.3)	24 (6.1)
15 to 29 min	111 (28.5)	114 (29.3)	87 (22.3)	113 (29.3)
30 to 59 min	31 (7.9)	103 (26.5)	79 (20.3)	166 (42.6)
1 to 2 h	3 (0.7)	67 (17.2)	85 (21.8)	50 (12.8)
2 to 4 h	6 (1.5)	18 (4.6)	55 (14.1)	21 (5.4)
More than 4 h	3 (0.7)	10 (2.6)	43 (11.2)	15 (3.8)

%[1]: Percentage; min[2]: minute.

Table 3. Mean patient waiting times during OPD visit in in Douala reference's hospitals.

Waiting times	Mean (min)	Standard-deviation
Taken to get to the hospital	34.97	32.07
Registration time	47.61	52.05
Waiting time to meet the healthcare worker	84.68	79.68
Consultation time	17.71	18.33

Table 4. Hospital recommendation by the participants.

Quality of care received	Hospital recommendation to others		Total	Chi[2]	P-value
	Yes	No			
Very good	59 (86.76)	9 (13.24)	68 (100.00)		
Good	195 (82.63)	41 (17.37)	236 (100.00)		
Not very good and not bad either	30 (42.86)	40 (57.14)	70 (100.00)	83.23	0.000
Poor	1 (12.50)	7 (87.50)	8 (100.00)		
Very poor	0 (0.00)	5 (100.00)	5 (100.00)		

The results in Table 2 indicate that most participants (166 patients, 42.6%) spent 30 to 59 min in consultation.

The mean and standard deviation of various time frames assessed during the study are shown in Table 3. Patients spent 34.97 ± 32.07 min to reach the hospital. The mean waiting time for registration was 47.61 ± 52.05 min. The mean waiting time to meet with a healthcare worker was the longest, at 84.68 ± 79.68 min. The mean time spent in consultation was 17.71 ± 18.33 min. Overall, the mean time at the OPD from registration to consultation was 150 ± 50.02 min (2.5 ± 0.62 h).

Table 4 presents patients' impressions of the quality of care received during their OPD visit. While the majority of patients (86.76%) who described the quality of care as very good recommended the hospital, all patients (100%) who rated the care as very poor did not recommend the hospital. There was a statistically significant link between the quality of care received and the hospital's recommendation by patients (P-value = 0.000).

The majority of patients, 238 (61.18%), rated the quality of care received during their visit as good. There was also a statistically significant link between the quality of care received and the hospital's recommendation by patients (p = 0.0001) shown in Table 5.

Most healthcare workers reported seeing between 10 and 20 patients daily (20 workers, 38.46%). According to healthcare workers, the main causes of long patient waiting times were a lack of health workers (44 workers, 84.6%), equipment shortages or wear (36 workers, 69.23%), and noncompliance with appointments or treatment (17 workers, 32.29%). For healthcare workers, a waiting time of 30 to 60 minutes was considered acceptable (24 workers, 46.15%). Most healthcare workers believed that long waiting times negatively affect patients' health (41 workers, 78.85%), shown in Table 6.

DISCUSSION

The mean age of participants in this study was 33.19 ±

Table 5. Relationship between impressions of the quality of care received and Hospital recommendation by the participants.

Variable	Modality	Recommendation to others		Total	Chi²	P-value
		Yes [N¹ (%²)]	No [N (%)]	N (%)		
Quality of care received in the hospital	Very good	59 (15.16)	9 (2.31)	68 (17.47)	77.28	<0.00001
	Good	195 (50.13)	43 (11.05)	238 (61.18)		
	Neither very good nor bad	30 (7.72)	40 (10.28)	70 (18.00)		
	Poor	1 (0.25)	7 (1.80)	8 (2.05)		
	Very poor	0 (0.00)	5 (1.30)	5 (1.30)		
Total		285 (73.26)	104 (26.74)	389 (100)		

N¹: Number; %¹: Percentage.

Table 6. Daily experience and perception of healthcare workers at the OPD in the in Douala reference's hospitals.

Variable	Modality	Number (N)	%
Number of patients received per day	Less than 10	4	7.69
	[10; 20]	20	38.46
	[20; 30]	15	28.85
	>30	13	25.00
Main causes of long patients wait times	Lack of healthcare workers	44	84.61
	Lack/Worn-out of equipment	36	69.23
	Communication barrier	9	17.31
	Non-compliance with appointments/treatment	17	32.69
Acceptable waiting time for patient care according to healthcare workers	Less than 15 min	4	7.69
	15 to 30 min	17	32.69
	30 to 60 min	24	46.15
	1 to 2 h	6	11.54
	More than 2 h	1	1.92
Does long waiting times affect the patient's health?	Yes	41	78.85
	No	21	21.15

years being the most represented, accounting for 86 (22.11%) patients? These results are similar to those observed by Adamu and Oche (2013) in Nigeria and Oche and Adamu (2014), who reported mean ages of 33 ± 12.9 and 33 years, respectively. However, Patel and Patel (2017) in India found a mean age of 30.31 ± 15.65 years. More than half of the respondents in this study were female, accounting for 226 (58%). This result aligns with studies by Ogaji and Mezie-Okoye (2017) in Nigeria, Ahmad et al. (2017) in Malaysia, and Aburayya et al. (2019) in Dubai, where females accounted for 58.6, 58.7, and 55.5% of the participants, respectively. These similarities in the proportion of female visitors to the OPD in this study and those in other developing and developed countries may be attributed to increased awareness among females about the importance of healthcare and their greater likelihood of seeking medical attention for minor symptoms. In contrast, Adamu and Oche (2013) in Nigeria and Aswar et al. (2014) in India reported higher proportions of females at 62.5% and 59.7%, respectively.

Travel time

The findings showed that the mean travel time to the OPD was 34.97 ± 32.07 min. In this study, 62.2% of patients took less than 15 min to get to the hospital. This result is lower than the average travel time to the OPD reported in Nigeria, which was 83 ± 48.9 min (Ogaji and Mezie-Okoye, 2017). The average travel time observed in this study also differs from that in India, where 60% of patients took between 30 min and 1 h to reach the

hospital (Vaishali and Soundara, 2017). The discrepancy between this study and the one conducted in India could be due to the fact that respondents in the Indian study were transported by a hospital van, which may have made travel more convenient. In contrast, the poor state of roads in Douala often leads to traffic jams, resulting in longer travel times. Given these conditions, patients in Douala might prefer using motorbikes, which can navigate traffic more efficiently than cars.

Registration time

The mean registration time in this study was 47.61 ± 52.05 min. This result differs from those of other studies, which report either shorter or longer registration times. For instance, Aburayaa et al. (2020) in Dubai, Ogaji and Mezie-Okoye (2017) in Nigeria, Oche and Adamu (2014) in Nigeria, and Ahmad et al. (2017) in Malaysia found mean registration times of 11.7, 24.8 ± 16.5, 78.2 ± 22.7, and 17.2 min, respectively. The discrepancy can be attributed to various factors. The hospital in Dubai, being located in the United Arab Emirates, benefits from advanced technology and efficient systems for managing patient flow. Similarly, while Malaysia is not a fully developed country, its higher standards of living and technological advancements contribute to shorter registration times. The study by Ogaji and Mezie-Okoye (2017) was conducted in a university teaching hospital, which typically has better resources and staff compared to other facilities, explaining the lower registration time observed there. In contrast, the high registration time reported by Adamu and Oche (2014) in Nigeria may be due to large patient volumes and limited staff, which result in extended waiting times despite patients arriving early. The combination of high patient numbers, few registration staff, and potential issues with staff punctuality likely contributes to the longer registration times observed in their study.

Patient waiting time to consult a healthcare worker

In this study, the mean time spent waiting to be seen by a healthcare worker was 84.68 ± 79.68 min. This extended waiting time is typical in developing countries, including Cameroon, where long patient wait times are common. This finding contrasts with results from studies by Adindu and Ekpereonne (2012) in Nigeria, Enabulele et al. (2018) in Nigeria, and Abuyayya et al. (2020), which reported waiting times of 146 ± 46, 146 ± 55.38, and 34.2 min, respectively. The shorter waiting time observed in Dubai, a technologically advanced city in the United Arab Emirates, highlights the impact of technological advancements and infrastructure on patient wait times.

The longer waiting times in the Nigerian studies compared to this study may be attributed to the higher population density and patient-to-doctor ratio in Nigeria. Given that Nigeria's population is nearly ten times larger than Cameroon's, it is expected that patients in Nigeria would experience longer wait times compared to those in Cameroon.

Consultation time

In this study, the mean consultation time was 17.71 ± 18.33 min. This finding is similar to results from studies by Ogaji and Mezie-Okoye (2017) in Nigeria, Enabulele et al. (2018) in Nigeria, and Ahmad et al. (2017) in Malaysia, which reported mean consultation times of 19.3 ± 6.8, 22.43 ± 12.12, and 18.21 min, respectively. These times are relatively higher than the 15 min per patient recommended by the British Medical Association (BMA). The longer consultation times may be due to patients initially seeking self-medication, traditional healers, or local health centers before coming to the OPD of competent hospitals, which often results in more complex cases requiring extended consultation. However, the consultation times in this study differ from those reported by Adamu and Oche (2013) in Nigeria, who found an average of 14 min, and another study with 7.18 ± 4.55 min. These shorter times may reflect a higher patient volume per healthcare worker, necessitating shorter consultations to manage the large number of patients efficiently.

Total patient waiting time

The mean patient waiting time in this study was 150 ± 150.06 min. This result is consistent with findings by Melesse et al. (2017) in Ethiopia, who reported a waiting time of 149 min, and Enabulele et al. (2018) in Nigeria, who found a mean waiting time of 146.75 ± 55.38 min. Additionally, Biya et al. (2022) reported a maximum waiting time of 185 min, and Ukizentaburuwe et al. (2021) observed a median outpatient waiting time of 4 h in Rwanda. However, this study's result differs from those reported by Adamu and Oche (2014) and Ogaji and Mezie-Okoye (2017) in Nigeria, who reported waiting times of 168 ± 35.73 and 274.1 ± 103.3 min, respectively. These differences may be attributed to the large number of patients relative to the few healthcare workers, the lateness of healthcare workers, and the late start of consultations.

Patient impressions of quality of care received

From this study, overall, the patients declared the quality of care received at the OPD as good or very good which could mean they were satisfied with the care received. Patient waiting time being one of the goals for the

improvement of quality healthcare has a role in the patient's perception of the quality of care received (Ulfa et al., 2017; Apichart et al., 2018; Al-Harajin et al., 2019). If a patient perceives the quality of care received at an OPD as good, it means the waiting time must have been acceptable in addition to the healthcare services received. From this study it was observed that the majority of patients (86.76%) who described the quality of healthcare received from the OPD as very good recommended the healthcare facility to a third party. Table 4 shows that the relationship between the quality of care received at the OPD and the patient's recommendation of the hospital to a third party were statistically significant (p=0.000). The result observed from this study is relatively higher than that gotten by Ogaji and Mezie-Okoye (2017) in Nigeria, Aswar et al. (2014) in India, Vaishali and Soundara (2017) in India and Adamu and Oche (2014) who had 77.2, 65.3, 62, and 80% of the respondents being satisfied with total OPD wait time, respectively. This difference can be explained by the fact that the patients in this study spent more time with the healthcare worker compared to the patients in the other studies. All patients would want registration time and time spent waiting to be seen by a healthcare worker minimized and time spent with the healthcare worker maximized (Aswar et al., 2014; Bleustein et al., 2014; Melesse et al., 2017). It is thus not surprising that majority of the patients who took part in this study were satisfied after their visit to the OPD. This study and the studies carried out by the above-mentioned authors also differ in that they evaluated the various parameters which could have influenced the patient's satisfaction contrary to results from this study which evaluated the patient's satisfaction based on the overall quality of care received during their stay at the OPD. The objectives of this study were achieved. The minimum sample size was obtained. Therefore, results found can be generalized. This study was a cross-sectional study. Patients' impression was found on the quality of care. Therefore, information bias related to cross-sectional study can be found. This limitation was also found in the literature review used in this study (Adamu and Oche, 2014; Aswar et al., 2014; Ogaji and Mezie-Okoye, 2017; Vaishali and Soundara, 2017). The level of satisfaction was not ranked, which could be considered in future research. Additionally, while the stopwatch could have introduced diagnostic bias, it was not significant compared to studies in the literature review that assessed patient waiting time (Adamu and Oche, 2014; Melesse et al., 2017; Ogaji and Mezie-Okoye, 2017; Enabulele et al., 2018).

Conclusion

It was concluded that the overall mean waiting time for consultation with a healthcare worker was longer.

However, the consultation time likely influenced patients' appreciation of the quality of healthcare received during their stay at the OPD, with a significant relationship between consultation times and the quality of care reported at various healthcare facilities. Despite the long waiting times, the majority of patients were satisfied with the quality of care they received at the hospital OPD. For healthcare workers, the main causes of prolonged patient waiting times include a shortage of healthcare workers, outdated infrastructure, and inadequate equipment. These issues should be addressed by the appropriate health authorities.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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