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Assessment of out-patients' perception on timing hospital appointment to reduce waiting time at primary health care centre Abakaliki, South East Nigeria: A cross-sectional study

Eze NC[1]* and Uneke CJ[2]

[1]Department of Community Medicine, Federal Teaching Hospital Abakaliki, Nigeria.
[2]Policy Information Platform Nigeria and Health Policy Programme, Ebonyi State University, Abakaliki, Nigeria.

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ABSTRACT

As an important factor of patient's satisfaction, waiting time, has gained increasing attention in the field of health care services. This study aimed to assess treated patients' perception on scheduling hospital appointment to reduce waiting time. A cross-sectional study using a convenience sampling method was conducted in a primary health centre in Abakaliki. A self-administered questionnaire was used for data collection and 5 point likert scale was used for analysis. Data were collected from 305 treated patients. Thirty six percent (36%) of the respondents agreed that they spend much time waiting for doctors or nurses when seeking health services in the facility. Thirty six percent (36%) of the respondents said that hospital appointment timing is very necessary, 34% of the respondents agreed very much that timing hospital appointment will make them not to stay too long in the hospital. Two-third of the respondents [64%] described hospital appointment timing as really relevant. Different features of the perceptions indicated the mean ratings (MNRs) and mostly ranged from 2.94 to 4.02 on a 5 point scale. The overall assessment of the perception had MNR at 3.76. In conclusion, adoption of an appointment system and flexible management of doctor scheduling may be an effective way to achieve reduced waiting time. It is recommended that policy back up for timing hospital appointments to improve service delivery and clients' satisfaction in our health system. More studies should look into patients' attitude towards long waiting time.

Keywords: Out-patient's perception, timing appointment, waiting time.

*Corresponding author. E-mail: ezenelson24@gmail.com**.** Tel: +2348066178881.

Abbreviations: CCHS, Canadian Community Health Survey; **DRIC,** Directorate of Research, Innovation and Commercialization; **MRI,** magnetic resonance imaging; **MAX,** maximum; **MNRs,** mean ratings; **MDR,** median rating; **MIN,** minimum; **N,** total number; **PWT,** physician waiting time; **R,** range; **TWT,** total waiting time.

INTRODUCTION

Total visit time is the time from the patient's arrival until departure. Arrival time is the time for registration, and departure time is the time of payment for medication. Two measurements of waiting time as adopted in this study are the physician waiting time (PWT) defined as the time from triage registration until medical consultation and total waiting time (TWT) defined as the difference between total visit time and the duration of medical service. Patients who are only medication-taking wait mainly before the consultation and those who have medical examinations and/or laboratory tests wait after consultation and this is a more critical issue (Chen et al., 2010).

Long wait times for health care have become a significant issue in the delivery of health services. Broadly speaking, patients may encounter three types of waits

during their interaction with the healthcare system. The first wait is the interval between the time the patient perceives the symptoms and decides to seek care, and the actual visit to the family physician or another provider of primary care. While most healthcare encounters issues can be satisfactorily resolved by the family physician, sometimes a specialist consultation is sought. The second wait occurs between the time a family physician makes a referral and the actual patient's visit to the specialist. The specialist may order further tests such as Magnetic Resonance Imaging (MRI) as a prelude to treatment, and the patient may then encounter a third wait (for the MRI and/or treatment). It is this third wait that attracts the attention of almost all policy efforts in Canada today (Amardeep et al., 2012).

As an important factor/variable of patient satisfaction, waiting time, has gained attention in the field of health care services. Many patient complaints come from the long waiting time and this in outpatient clinics has been shown to be the major dissatisfaction with medical care delivery and a barrier to further use of health care facilities by affected patients (Ajayi et al., 2005).

There are two separate types for outpatients. One is the interval between the date of the family doctors' referral and the date of the first appointment. Another is the time that elapses between a patient's arrival at the outpatient department and his/her entry into the consulting room. The former has gained a global attention especially in Europe partially due to the availability of medical resources and easy access to the Health Care System. The latter for outpatients also attracted much attention. It can be further divided into two subcategories: waiting before consultation and waiting after consultation. The waiting before consultation is generally longer than after consultation and waiting before consultation is prevalent in health care systems where patients are not given time-specific appointments and no appointment system is established.

Waiting can be greatly decreased by the introduction of an appointment system. The effectiveness of an appointment system depends on the rate of patients using this system, and higher rate of walk-in patients would limit its effect.

Reducing exiting patients' waiting time is not only valuable for the patients but also is helpful to decrease the hospital workload. Appointment systems are widely used as a good way to control rate of patients' arriving for consultations. It has been widely used in western countries (Cipriano et al., 2008; Mariotti et al., 2008; Okotie et al., 2008). Appointments could be patient demand-orientated and doctor-orientated. One is to adjust the patients' arrival, and the other is to adjust medical service provision. Comprehensive understanding of the waiting time distribution and measures to reduce the number of patients arriving late for appointments are vital to improving the clinic efficiency (Okotie et al., 2008). The objective of this study was to obtain data on the treated patient perspective concerning timing hospital appointment to reduce waiting hour in the health facility and to inform decisions regarding the establishment of wait time targets.

MATERIALS AND METHODS

Study area

This study was carried out in Primary health care centre, Azuiyiokwu in Abakaliki Local Government Area of Ebonyi State. Ebonyi has an estimated population of 4.3 million and occupies a land mass of 5935 km^2 and about three-quarters (of 4.3 million) of the population dwell in the rural area with farming as their major occupation (Onoh et al., 2012). An average of 50 exiting patients per clinic day is recorded in Primary health care centre, Azuiyiokwu, Abakaliki.

Study design, study population and sample

The study was a descriptive, cross-sectional survey. The study population consisted of men and women attending clinic in primary health care (PHC) centre, Azuiyiukwu, Abakaliki.

Convenience sampling method was used to recruit adequate and eligible subjects for the study since the facility is small. That means that every adult who attended the clinic and consented to the interview was recruited as participant. 305 participants were recruited for the study. All adults that consented were recruited into the study while those that did not consent were not recruited. The study lasted between January and March 2016.

Data collection

Self-administered questionnaires were used for data collection. The questionnaires contained questions on socio-demographic variables, appointment experience and perception on timing hospital appointment. All the questions with the exception of socio-demographic data were in a 5 point likert scale. The questionnaire was pre-tested at PHC Nwezenyi by the trained staff and the investigator. Two female nurses (research assistants) were recruited and trained for 1 day to improve their skills in data collection and for uniformity in administering questionnaire. The rationale for carrying out the study was carefully explained to the respondents so as to get their maximum cooperation. They were also assured of the confidentiality of data collected.

Data analysis

Data were checked for errors before analysis. Quantitative variables were summarized using mean whereas categorical data were summarized using frequencies and percentages and presented in tables. The range, median and mean of the each question in the likert scale were analysed using Statistical Package for Social Sciences (SPSS) version 20.

Ethical considerations

Approval for the study was obtained from the Directorate of Research, Innovation & Commercialization (DRIC), Ebonyi State University, Abakaliki Nigeria. Permission was given by the Abakaliki Local Government Area and informed consent was obtained from the participants.

RESULTS

All the three hundred and five (305) participants sampled responded to the study giving 100% response rate.

The results of the study were presented in a series of tables and diagrams followed by appropriate analysis.

In Table 1, the age of respondents ranged from 20 to 45 years with a mean age of 27 ± 5 years. Majority of the respondents (87%) were married and 97% had formal education. Thirty eight percent (38%) were self-employed and civil servants accounted for 23%.

Table 2 shows the options answered by each respondents and the analysis is based on mean rating (MNR), median rating (MDR) and range(R). For instance the figures represent Likert rating scale of 1-5 points, where 1 point = grossly irrelevant; 2 points = irrelevant; 3 points = relevant; 4 points = very relevant; 5 points = very much relevant. In terms of analysis, values ranging from 1.00 to 2.99 points are considered low, whereas values ranging from 3.00 to 5.00 points considered high.

Table 3 shows the range, median and mean rating of answers to questions 7 to 18 with 30% of the respondents neither agreed/ nor disagreed with distance to the health facility, transport fare being expensive and very busy work schedule being one of the challenges faced when seeking health services in the health facility.

Twenty four percent (24%) of the respondents agreed that they spend much time and 36% reported too long a waiting time for doctors or nurses when seeking health services in the facility.

Patients' perception on timing hospital appointment

Twenty six percent (26%) of the respondents said that timing hospital appointment is necessary while 36% admitted that it is very necessary.

In relation to timing hospital appointment, 46% agreed while 34% very much agreed that it will make them not to stay too long in the hospital. Forty three percent (43%) agreed to the fact that it will help them meet up with other engagement. Fifty-six percent agreed that every client should exercise patient while waiting for doctor or nurse in the health facility. About 45% disagreed with one may forget the timed appointment. Two-third of the respondents (66.6%) described timing hospital appointment as very (much) relevant. The mean is 3.76 in a 5 point likert scale.

In Table 4, the median ratings (MDRs) of the above questions were all at 4 (that is, very relevant) except for one which was at MDR of 3. The range (R) was mostly from 1 to 5 (that is, all respondents answered).

In Table 5, the MDRs ranged between 2 and 4 with most at 4 (that is, very relevant). The range (R) was from 1 to 5. The overall assessment of the perception had MNR at 3.76 (that is, almost exclusively very relevant).

Table 1. Socio-demographic characteristics of respondents.

Variables	Frequency (n = 305)	Percent (%)
Age group (years)		
≤ 25	144	47
26-35	108	35
36-45	45	15
≥ 46	8	3
Gender		
Male	107	35
Female	198	65
Religion		
Christianity	279	91
Islam	21	7
Others	5	2
Marital status		
Single	24	8
Married	266	87
Separated	15	5
Educational status		
None	9	3
Primary	20	7
Secondary	192	63
Tertiary	84	27
Occupation		
Civil servant	71	23
Self employed	117	38
Student	45	15
Applicant	72	24

DISCUSSION

This study found that 36% of the respondents reported too long a waiting time for doctors or nurses when seeking health services in the facility and 36% admitted that timing hospital appointment is very necessary. About 46% agreed that it will make them not to stay too long in the hospital while two-thirds (66.6%) of the respondents described timing hospital appointment as very relevant. The overall assessment had MNR at 3.76 in a 5 point likert scale. The finding on waiting time is consistent with that of the Canadian Community Health Survey (CCHS) which revealed that close to 30% of surveyed Canadians said their waits to see a specialist for a new illness or condition were unacceptable (Statistics Canada, 2005) and not different from the 43.7% from Japan Ministry of Health, Labor, and Welfare (Okotie et al., 2008) and also showed similar sample size (Leung et al., 2007).

Table 2. Number of respondents who answered options (1-5) in questions 7-18.

Q/no	Option 1	Option 2	Option 3	Option 4	Option 5	Total
7	12	60	32	96	105	305
8	27	84	38	96	60	305
9	21	66	32	138	48	305
10	18	48	77	108	54	305
11	36	96	44	75	54	305
12	30	48	83	108	36	305
13	6	24	35	138	102	305
14	6	42	44	129	84	305
15	12	30	47	168	48	305
16	24	135	20	60	66	305
17	30	102	83	36	54	305
18	6	24	83	120	72	305

Table 3. Range, median and mean of answers to questions 7-18.

Question no.	Range	Median	Mean
7	1-5	4	3.72
8	1-5	4	3.26
9	1-5	4	3.42
10	1-5	4	3.44
11	1-5	3	3.59
12	1-5	3	3.24
13	1-5	4	4.02
14	1-5	4	3.81
15	1-5	4	3.60
16	1-5	2	3.03
17	1-5	3	2.94
18	1-5	4	3.76

Table 4. Outcome of evaluation of appointment experience by hospital attendees (n = 305).

Parameters assessed	Mean	Median	Min-Max
Distance to health facility. How would you describe the challenge?	3.72	4	1-5
Transport fare is expensive. How would you describe the challenge?	3.26	4	1-5
Busy work schedule. How would you describe the challenge?	3.42	4	1-5
Time spent waiting for doctor or nurse. How would you describe it?	3.44	4	1-5
When you complain about time spent. Are there some changes?	3.59	3	1-5

Table 5. Outcome of evaluation of perception about timing hospital appointment by hospital attendees (n = 305).

Parameters assessed	Mean	Median	Min-Max
Timing hospital appointment. How would you describe it?	3.24	3	1-5
How would you describe the following in relation to timing hospital appointment			
Would it help you not to stay too long in the hospital?	4.02	4	1-5
Would it help you to meet up with other engagements?	3.81	4	1-5
Is it expected that every patient should exercise patience while waiting for doctor/nurse?	3.60	4	1-5
One may forget the timed appointment?	3.03	2	1-5
Does disorganize ones engagement?	2.94	3	1-5
Relevance of timing hospital appointment. How would you describe it?	3.76	4	1-5

Patient satisfaction is a worthwhile goal of health care service (Shea et al., 2008; Chand et al., 2009) and there are a lot of reasons for implementing plans to achieve it. It has been suggested that waiting time is the most important determinant of patient satisfaction. Waiting time statistics have become an important standard by which health care is measured (Su et al., 2009; Kawakami et al., 2008; Aboumater et al., 2008). Waiting time statistics also hold great promise to facilitate the evaluation of performance of health care institutions (Kim et al., 2009; Slowiak et al., 2008). Long waiting times induce negative effects on the quality of the hospital before finally crippling the competitive advantages of the hospital. Understanding the current situation of waiting time and exploring possible strategies to reduce waiting time are the objectives of the present study. Long waiting time in an exiting patient setting is very common in hospitals. Waiting times varies among different scales of hospitals. According to the Japan Ministry of Health, Labor, and Welfare, the percent of the treated patients whose waiting time before consultation was less than 30 min was 56.1, 43.0, and 37.3% for small, middle, and large scale hospitals, respectively. As it is difficult to know the waiting time distribution of different levels of hospitals, the scope of this study was limited to primary health care system, as there are increasing visits to primary health care centres due to lower cost, nearness to clients' residence and other reasons. There are two basic methods to reduce total visit time and waiting time for outpatients. One is to adjust the time of clinic arrival for different patients, and the other is to adjust medical service provision. Comprehensive understanding of the waiting time distribution and measures to reduce the number of patients arriving late for appointments are vital to improving the clinic efficiency (Okotie et al., 2008). Reducing outpatients' waiting time is not only valuable for the patients but also is helpful to decrease the hospital workload. Appointment systems are widely used as a good way to control rate of patients' arriving for consultations. It has been widely used in western countries (Cipriano et al., 2008; Mariotti et al., 2008).

Appointments could be patient demand-orientated and doctor-orientated. Hospitals should not expect 100% of outpatients to use the appointment system, or expect 100% of appointed patients to honor their appointment time. One important fact is that over a half of patients waiting time is before physician's entrance at the clinic. It means that patients come to clinic early or physicians come to clinic late. With reducing this gap patients waiting time would be reduced considerably. Some health facilities have reduced this gap to less than 10 min (Afsoon et al., 2013).

Demand-oriented scheduling could contribute to reducing waiting time. The other solution to reduce waiting time lies in the idea of flexible scheduling of doctors' clinic time. Some hospitals have been scheduling different numbers of doctors on different weekdays according to the expected number of patients. This idea can also be applied to different working days. These two adjustment measures have different advantages and limitations (Chen et al., 2010).

The objective of this study was to obtain data on the treated patient perspective concerning timing hospital appointment to reduce waiting hour in the health facility and to inform decisions regarding the establishment of wait time targets. The data obtained in this survey are quite unique. Although patients' perception on timing hospital appointment to reduce wait time and its impact have been surveyed, this study was the first to focus on the wait time for consultation in primary health care in South-Eastern Nigeria.

Conclusions

It has been shown that changing in physicians work time is more important than increasing the number of physicians in reducing patient's waiting time (Afsoon et al., 2013). This survey provided in-sights into the relevance of timing hospital appointment to reduce waiting time and found the overall assessment of perception at MNR of 3.76 (that is, almost exclusively very relevant). Long wait time is a barrier to healthcare delivery in community hospitals and demand-oriented doctor scheduling, adoption of an appointment system and flexible management of doctor scheduling may be effective ways to cope with waiting time.

Limitation

It was a small institution based study and may not accurately reflect the true picture in larger health institutions.

RECOMMENDATIONS

Managers/administrators of health facilities and policy makers are encouraged to make evidence based policy on timing hospital appointment such that productivity, workers' satisfaction, health service delivery and clients' satisfaction will be optimized. It will also improve access and service utilization in our health systems.

Declarations

Approval for the study was obtained from the Directorate of Research, Innovation & Commercialization (DRIC), Ebonyi State University, Abakaliki Nigeria. Permission was given by the Abakaliki Local Government Area and informed consent was obtained from the participants.

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