

A study on patient waiting time in neurology OPD of a tertiary healthcare centre and its association with patients' demographic profile

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International Journal of Science and Technology Research Archive, 2022, 03(02), 082–088

Publication history: Received on 12 October 2022; revised on 20 November 2022; accepted on 22 November 2022

Article DOI: <https://doi.org/10.53771/ijstra.2022.3.2.0133>

Abstract

This study is aimed at assessing the patients' waiting time in the neurology outpatient department of a tertiary health care institution in North East India. This is a prospective observational study where duration of patients' waiting time, doctor consultation time and total waiting time were noted and recorded for each patient.

The participants were enrolled randomly in this study and total number of participants was 80 including men and women from different age ranges. The results included data records of (1) The mean waiting time which was found to be 110.86 minutes (2) Mean consultation time was 5.34 minutes and (3) Mean total waiting time was found to be 116.20 minutes.

From the findings of this study, it can be concluded that efforts need to be taken to reduce the long waiting time; which is identified by the WHO as an important index for determining the quality and satisfactory health services; in order to help improve patient's satisfaction, winning their trust as well as their willingness and promptness to acquire basic healthcare needs and services.

Keywords: Patient waiting time; Consultation time; Quality patient services; Patients' discomfort; Healthcare

1 Introduction

The patient waiting time is defined as "the length of time from when the patient entered the outpatient clinic to the time the patient actually leaves the outpatient Department" [1]. It is the time taken by the patient for following necessary procedures before meeting any clinical personnel or for using any services that the hospital or clinic renders like emergency treatment or any diagnostic testing [2]. The WHO has identified the patient waiting time as an important index for determining the quality and satisfactory health services offered by the respective health facility [3, 4].

Evidence of a low patient waiting time contributing towards high positive attitudes of patients suggests the importance of this parameter in improving the efficacy and wellness of both the healthcare services provider and patients [4]. However, longer patient waiting time has been observed to be one of the major roadblocks in providing quality healthcare services globally. For instance, a study conducted in an outpatient department in Ireland showed that 50 percent of the patients had to wait for almost 60 percent longer of the time. In a developed country like USA, it was reported that patient waiting time varies on an average of an hour in Atlanta to 188 minutes in Michigan. Countries with

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lower development index face a more prominent issue, with Nigeria reporting a longer patient waiting time of 90-180 minutes in 60 percent of the patient population [2]. This very same issue is seen here in India where an average of 2 hours time being spent by the patient for acquiring basic health services [5]. The nature of the healthcare provider here in India has an influence on the duration of waiting time with a shorter waiting time of 15.5 minutes in a private facility as compared to 20.3 minutes in a government owned centre. Gender profile of the patient also has a direct impact on the waiting time with male patients experiencing a shorter waiting time as compared to their female counterparts. A shorter duration of waiting time was seen to be directly proportional to the poor health condition of patients or their advanced age [6].

The main factor contributing to long patient waiting time is the low ratio of healthcare workers attending to the needs of the increasing patient population [4]. Other factors include no prior scheduling of appointments leading to more time taken in the registration counter and lengthy service procedure. Methods such as providing access to an easy and timely scheduling process and equivalent distribution and proper stationing of healthcare workers can be considered to minimise the unnecessary longer waiting time [2, 3].

Lengthy patient waiting time can have a detrimental outcome on the psychological as well as mental health of an individual. Worst consequences such as decrease in quality of life, deterioration of serious illnesses and even death may occur. Patient discomfort resulting from long patient waiting time can also lead to disinclination of the patient to undertake any treatment or diagnosis resulting in failure of adherence thereby affecting not only the patient but also the healthcare system [6, 7]. This study is aimed at assessing the patients' waiting time in the Neurology Outpatient Department of a tertiary health institution in North East India. In our study, OPD included patients receiving diagnosis and consultation but not those who were admitted in the ward [8].

2 Material and methods

2.1 Materials

2.1.1 Study design

This is a prospective observational study.

2.1.2 Study population

Patients who attended the OPD Department of Neurology in NEIGRIHMS, Shillong, India.

2.2 Methods

2.2.1 Study period

November-December 2019 and January-February 2020.

2.2.2 Study procedure and data collection

Patients were recruited by random numbers allocation. Each patient was contacted personally and after obtaining their due consent, the different timings were noted and recorded accordingly. The following time factors were noted and recorded for each patient.

- *Waiting time*: Time spent from registration till the time before consultation [9].
- *Consultation time*: Time spent in the doctor's chamber
- *Total waiting time*: The total waiting time as from arrival to exit from the outpatient department [9].

2.2.3 Inclusion criteria

All patients attending the Neurology OPD, NEIGRIHMS, Shillong

2.2.4 Exclusion criteria

Critically ill patients

2.3 Ethical approval

Approval was obtained from the Institute Ethical Clearance Committee (NEIGR/IEC/M8/S5/19 dated 2nd July 2019).

2.4 Statistical analysis

IBM SPSS statistics 26 software was used for performing each statistical analysis. Students's t-test was employed to compare means and Microsoft Excel 2007 was used for computing percentages. The level of statistical significance was taken to be 95 percent confidence interval ($p < 0.05$).

3 Results

3.1 Socio-demographic profile

3.1.1 Age profile

The total number of participants in this study is 80. Mean age was 42.46 years. The maximum age groups were from 0-20 years (38.75 %) and 41-60 years (36.25 %). Minimum age group was 81-100 years (2.5 %). The results are given in Table 1.

3.1.2 Gender profile

Female participants enrolled in the study were more in (57.5 %) as compared to their male counterparts (42.5 %). The results are given in Table 1.

3.1.3 Residential profile

Urban population accounted for about 63.75 percent and rural population accounted for only 36.25 percent in this study. The results are given in Table 1.

Table 1 Distribution of patients based on their socio-demographic profiles

Socio- demographic factors		N (%)
Age groups	0-20 years	9 (11.25)
	21- 40 years	30(37.5)
	41- 60 years	30(37.5)
	61-80 years	9(11.25)
	81- 100 years	2(2.5)
	Total	80 (100)
	Mean	42.4625
Gender	Male	34 (42.5)
	Female	46 (57.5)
	Total	80 (100)
Residence	Rural	29 (36.25)
	Urban	51 (63.75)
	Total	80 (100)

3.2 Duration of waiting time, consultation time and total waiting time

The mean waiting time from registration till waiting consultation was found to be less than an hour (110.86 minutes) with minimum time of 5 minutes and a maximum duration of about 240 minutes. Consultation time however was seen to be faster as compared to the waiting time with a mean of only 5.34 minutes, minimum time of 2 minutes and maximum time to be 20 minutes. The total waiting time from registration till completing consultation rose to a mean 116.20 minutes with a minimum time of only 13 minutes and a maximum time of about 245 minutes. The results are presented in Table 2.

Table 2 Duration of waiting time, consultation time, total waiting time and their statistics

Statistics	Waiting time (minutes)	Consultation time (minutes)	Total waiting time (minutes)
Mean	110.86	5.34	116.20
Median	107.50	5.00	112.50
Standard deviation	57.233	2.788	57.162
Minimum	5	2	13
Maximum	240	20	245

3.3 Comparison between age profile and mean total waiting time

The data in Table 3 described the statistical analysis between the mean total waiting time and its association with age profile of patients. $p > 0.05$ depicted no significant association between age of patients and mean total patient waiting time indicating that no preference was given to any age group during waiting or consultation time but instead registration number wise was taken into consideration.

Table 3 Age profile vs. Mean total waiting time

Age	No of patients (n)		p-value
	≤ 120 minutes	> 120 minutes	
≤ 40 years	17	22	0.095
> 40 years	23	18	0.063

3.4 Comparison between gender profile and mean total waiting time

$p > 0.05$ depicted no significant statistical association was seen between gender profile of patients and mean total waiting time indicating that no preference or favour was given to any group of patients but instead registration number wise was taken into consideration. The data is represented in Table 4.

Table 4 Gender profile vs. Mean total waiting time

Gender	No of patients (n)		p-value
	≤ 120 minutes	> 120 minutes	
Female	22	24	0.046
Male	19	15	0.144

3.5 Comparison between diagnosis and mean total waiting time

Based on the diagnosis of patients, the p value is more than 0.05 ($p > 0.05$). No significant association was seen in terms of patients' diagnosis with respect to their total waiting time time indicating that no preference or favour was given to any group of patients but instead registration number wise was taken into consideration. The datas are given in Table 5.

Table 5 Diagnosis vs. Mean total waiting time

Diagnosis	No of patients (n)		p-value
	≤120 minutes	>120 minutes	
CVA	9	12	0.090
PIVD	6	1	0.395
Headache	7	9	0.079
Neuropathy	0	4	0.500
Somatic disorder	0	1	0.500
Seizure	5	9	0.177
Carpal Tunnel	0	1	0.500
Myopathy	0	1	0.500
AIDP	2	0	0.500
Paresthesia	2	0	0.500
CIDP	0	1	0.500

4 Discussions

In this study, the mean age of patients enrolled was found to be 42 years which is almost similar to result obtained in a similar study with reported mean age of 45 years [10]. Female patients (57.5 %) were more in number as compared to their male counterparts (42.5 %). Same observation was seen in a study conducted in Valsad, Gujarat [8]. About 63.75 percent of urban patients and 36.25 percent belonging to the rural category were enrolled in this study. The difference seen between the urban and rural population enrolled could be due to easy accessibility to the healthcare facility by the urban population since our centre of study is located within the new town area.

The mean consultation time obtained from our study comprising of 80 participants was about 5 minutes which is in line with the study conducted in Nigeria where they reported a mean consultation time of 7 minutes [11] and however differ from another reported study where they found that consultation time was about 13.35 minutes [8]. Evidence of lesser duration of consultation time contributing to more patient satisfaction was reported with majority of the patients being more satisfied when consultation time by the doctor is less than 30 minutes [1]. However, consultation time may differ depending on various factors being presented to the doctor such as seriousness of illness, the type of expertise handling the patient and nature of the hospital services [9].

Our study reported a mean total waiting time of about 116 minutes which is less as compared to two previous studies done where they reported the mean total waiting time to be 168 minutes [11] and 137 minutes respectively [4]. This shorter duration that the patient had to wait for acquiring necessary services is important in increasing the satisfaction score and can help in bringing about lesser anxiety or psychological impact on the patient. This result obtained in our study is in contrast to a study in Pakistan where patients had to wait for longer time to attain any kind of healthcare services [12]. The issue of longer waiting time for patients varies from country to country and has its own implications. Long waiting time is reported almost in every developed or developing nation across the globe. It is one of the main factors contributing to less patient satisfaction and leading to a less efficient healthcare system services [8].

When correlating the relationship that the age factor has on the waiting time, it was found out that the age of patients (<=40 years; >40 years) did not have any significant impact ($p>0.05$) on the duration of waiting time which is however different to the study conducted in an outpatient care in India where elderly patients were given first preference (Sriram et al., 2018). The result in our study could be due to the services being imparted based on token system and no preference entertained. The gender profile of a patient also did not have any significant association ($p>0.05$) with the total waiting time indicating that no preference or favour was provided to any particular gender but purely based on the token number of the patient. This again differs from a reported study where females were reported to be waiting for longer hours than males [6, 11]. The diagnosis factor also did not have any significant effect ($p>0.05$) on the patient waiting time as it is seen from the reported p-value ($p>0.05$). The dissimilarity of our result with another reported study

[6] where patients presenting with more serious or emergency cases were first taken for treatment could be explain from the fact that our data samples were collected from only one OPD department and no emergency cases or critically ill patients were taken for enrolment. However, our study has a less sample size and the data collection was done from only one specific OPD area of the institution, hence sufficient data and an extensive patient enrolment from other OPD services is required in order to further enhance the validity of our report. Pooling of other datas from other areas might help in better understanding of the underlying major issue that every healthcare institution or system is facing worldwide and proper policy to be put in place.

5 Conclusion

Patient waiting time as identified by the WHO is an important factor in determining the quality of healthcare services and one of the main factor contributing to patients' complaints and dissatisfaction [13]. Reducing the longer waiting time will help in improving patient's satisfaction, winning their trust as well as their willingness and promptness to acquire basic healthcare needs and services. Hence, efforts need to be taken by the management as well as the staffs to improve the different services and shortening the waiting time which is an important key factor in presenting the high quality service and brand image of the healthcare facility.

Compliance with ethical standards

Acknowledgments

The authors express gratitude to the Department of Neurology for providing us with the patients' data.

Disclosure of conflict of interest

All authors declare no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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