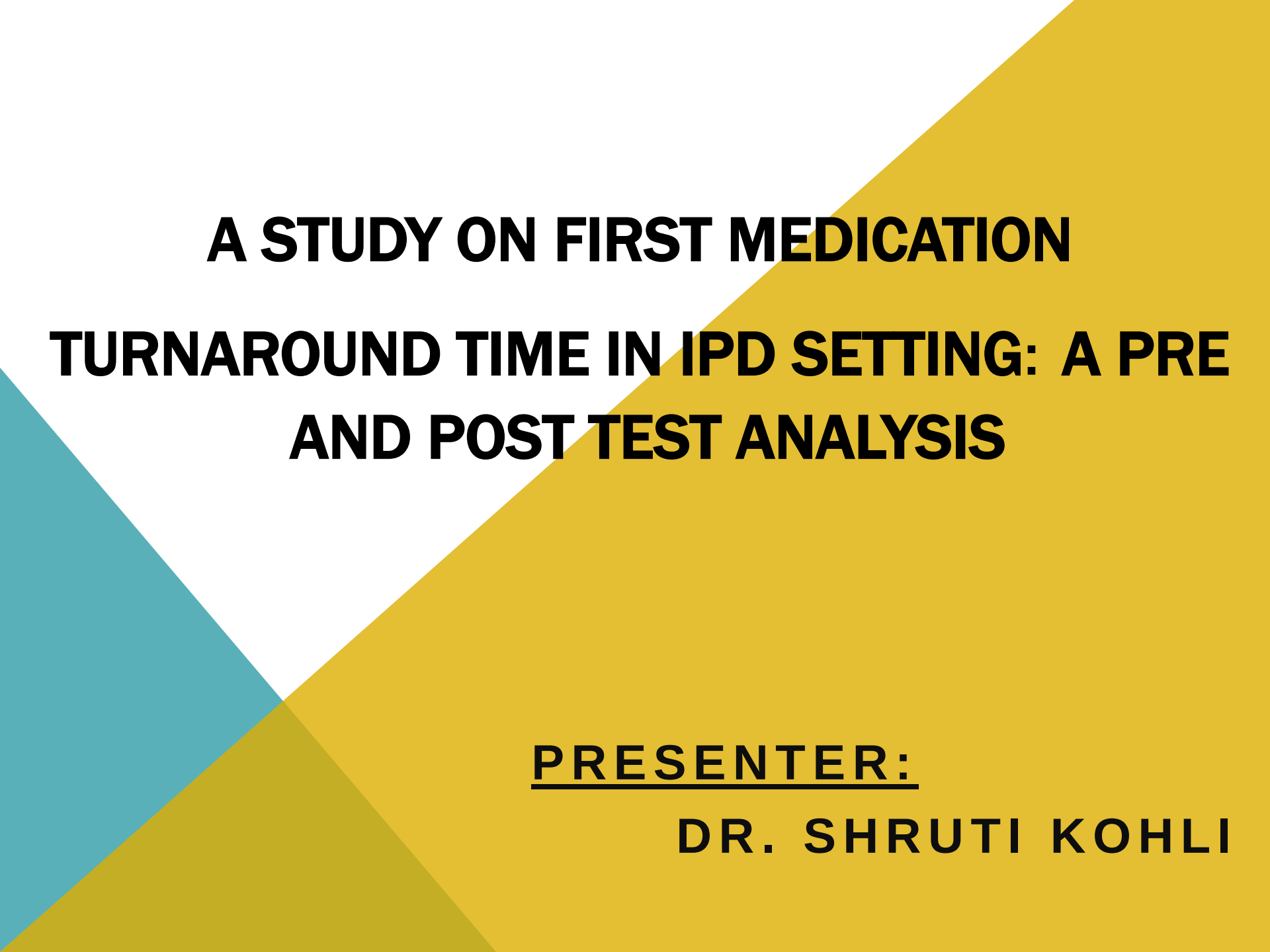




A STUDY ON FIRST MEDICATION TURNAROUND TIME IN IPD SETTING: A PRE AND POST TEST ANALYSIS

PRESENTER:

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INTRODUCTION

- Medication turnaround time is defined as the interval from the time a medication order is written (manually or electronically) to the time the medication was administered.
- Monitoring medication turnaround time in inpatient settings allows organizations to measure the impact of their health IT application on the increased efficiency of patient care.

The medicines are the lifeline of any treatment. The moment a patient enters the IPD, they thrive for medicines to relieve their suffering. Often the attendants complain about the delay in first medication of their patient.

A small scale observational study has been done over 20 days for observing the activities in Wing A and B (SRS Sunflag Hospital, Faridabad) in order to explore the causes for delay in Medication Turn Around Time.



RATIONALE

The common complaints by the patient party as registered by the service excellence department in SRS Sunflag Hospital, stated that the patient receives first dose of medicine many hours after the admission. The average Medication Turnaround Time as recorded by the administration team in month of January was around 4.5 hours i.e.: 270 minutes whereas the policy of the hospital says that first dose of medication should be given no later than 2 hours i.e.: 120 minutes.

RESEARCH QUESTION

What are the probable causes for delay in Medication Turn Around time for new admitted cases in Wing A and B of SRS Sunflag Hospital, Faridabad ?



NULL HYPOTHESIS

There is no significant change in First Medication Turnaround Time after intervention.



OBJECTIVES

- 1.To study the process flow chart and identify the ongoing activities for indentation of drugs for new admitted cases.
- 2.To explore the probable causes for the delay in Medication Turn Around time for new admitted cases.
- 3.To implement an intervention for recording of vital activities.
- 4.To compute the reduction in TAT after implementation of the intervention in specified time period

METHODOLOGY

Study Design: Pre Test & Post Test Observational study

Study Population: 210 New admitted patients to the Ward In Pre Test Phase and 180 New admitted patients to the Ward In Post Test Phase

Study Area: Wards of Sunflag Hospital



DATA COLLECTION

The study was carried out in the month of March for 20 days. In the pre test phase the critical activities of the Nursing staff, Duty Doctors, Consultants and GDA were observed for 20 working days.



The flowchart consists of three green downward-pointing arrow shapes arranged vertically on the left side of the slide. Each arrow contains a step name. To the right of each arrow is a corresponding text block describing the step. The background features a blue triangle on the bottom left and a yellow triangle on the bottom right, meeting at a diagonal line.

**ADMISSION
AND
REPORTING**

Patient is admitted to the ward accompanied by the nurse from nurse station.
Then nurse informs the concerned Doctor.

**INITIAL
ASSESSMENT**

Nurse gives the room orientation to the patient and nurse examines the patient's condition and fills up the IP assessment form online in HIS.
Then nurse informs the concerned Doctor.

**DOCUMENTA
TION**

Then Doctor comes and examines the patient.
Writes down the chief complaints, vitals, allergies, medication advice, investigations to be done, provisional diagnosis etc.

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graph TD; A[INFORM] --> B[MEDICATION ORDER WRITTEN]; B --> C[INDENT ORDER GIVEN];
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INFORM

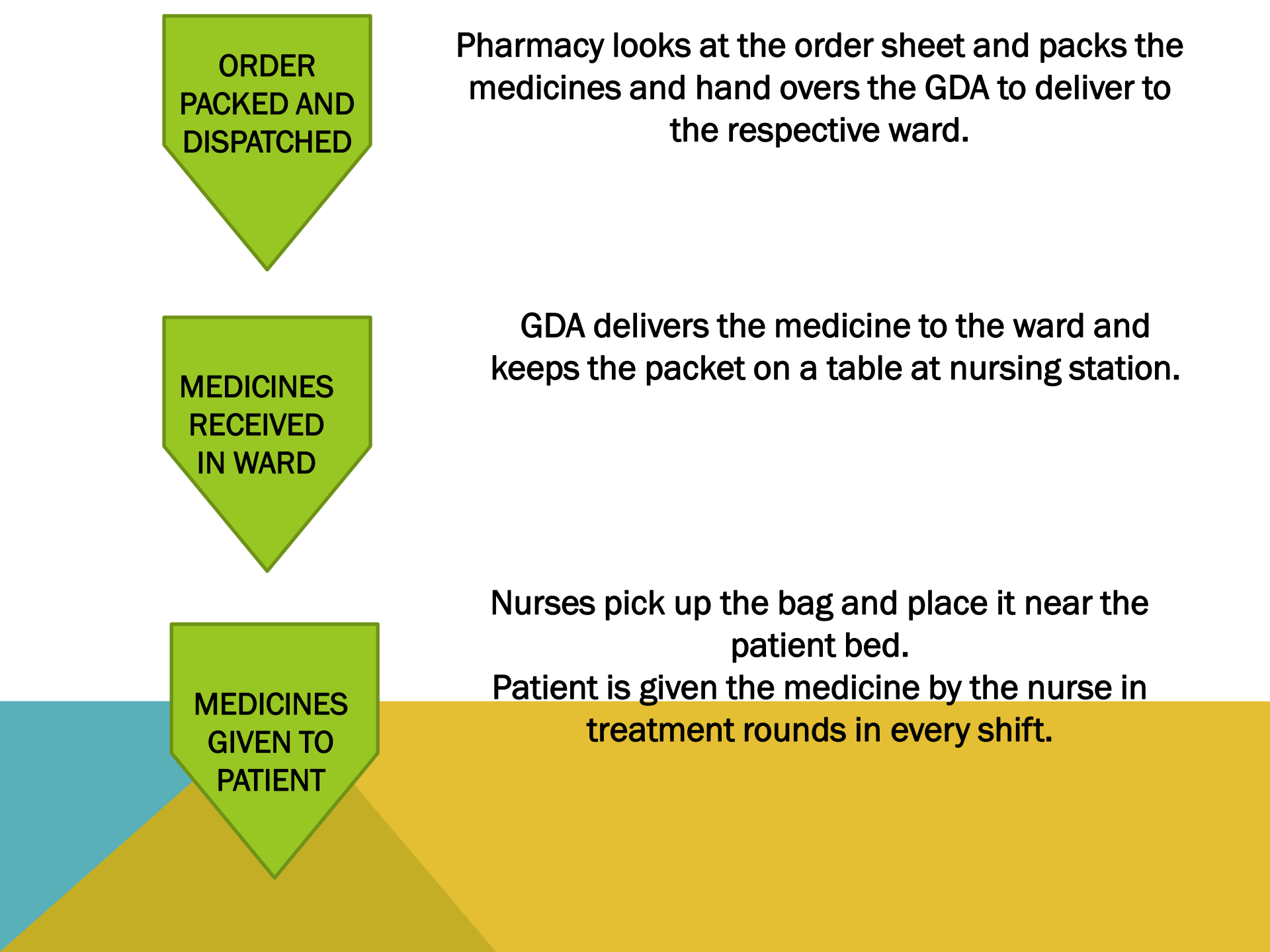
Then nurse counter checks the command and inform the duty doctor to write the prescription on physician order sheet.

MEDICATION
ORDER
WRITTEN

Then Duty Doctor examines the patient and then writes the prescription as mentioned by Consultant on Physician order sheet.

INDENT
ORDER
GIVEN

After the prescription has been written on Physician order sheet, nurses place the order of the medication on Pharmacy portal.



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graph TD; A[ORDER PACKED AND DISPATCHED] --> B[MEDICINES RECEIVED IN WARD]; B --> C[MEDICINES GIVEN TO PATIENT];
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ORDER
PACKED AND
DISPATCHED

Pharmacy looks at the order sheet and packs the medicines and hand overs the GDA to deliver to the respective ward.

MEDICINES
RECEIVED
IN WARD

GDA delivers the medicine to the ward and keeps the packet on a table at nursing station.

MEDICINES
GIVEN TO
PATIENT

Nurses pick up the bag and place it near the patient bed.

Patient is given the medicine by the nurse in treatment rounds in every shift.

Based on the activities in the process of indentation to administration of medication, data was collected under following heads:

- Date of admission
- Time of Admission (T1)
- First indent time- Time at which the Nursing staff ordered the indent of Cannula, Germicidal Solution and Dressing.(T2)
- Prescription time – first time at which the prescription by the Consultant was available in patient records. (T3)

- Order by Resident on Duty – time at which the Duty Doctor has written the prescription on Physician order Sheet.(T4)
 - Treatment indent time – Time at which the Nursing staff made the ordered the indent of Medicines.(T5)
 - Medicine received in Ward – (T6)
 - Treatment Administration Time – (T7)
- 

Causes for the delay at Level 1:

Duty Doctor not attending the patient soon after the arrival in the ward.

- Duty doctor does not prescribe any medication based on the requirement of patient. Moreover, the Duty Doctor does not check the vitals of the patient themselves to know the status of the patient in order to prescribe any medicine. They usually copy the vitals from nursing sheets which may be 2 hours old also.
- Delay in writing the prescription by Consultant and their team.

- Low Nurse to Bed ratio which is around 1:7.
- Nurses are involved in too much paper work and there is poor management of time.
- Duty doctor takes more time to write the prescription on physician order sheet
- There is no fixed time for giving treatment and recording vitals. They usually do these activities on the arrival of the Consultant.
- The protocol for indentation of medicines is not clear, ie: some nurses indent the medicines based on consultant's prescription and some wait for the RMO to fill in the physician order sheet and then they indent.

- On average a nurse takes around 3 to 4 minutes in making an indent for Cannula, Germicidal Solution and Dressing for each patient. Similarly, pharmacy takes around 3 to 4 minutes to verify the order, packing and making the bill for this indent. Hence, about 8 minutes are utilized for the first non-medicinal indent which consumes around 60 to 80 minutes per day (excluding the time taken by the person delivering the order) and it creates traffic in the busy hours of hospital. This step has not been considered as this is a non medicinal indent.

Causes for Delay at Level 2:

- Low manpower at pharmacy.
 - There is low real time availability of GDA staff on the floor.
 - Moreover there is no follow up from nursing staff's end for the order even in cases of stat orders.
 - There are also times when only a single bag is being delivered from the pharmacy.
- 

Causes for Delay at Level 3:

- The person who delivers the bag at the nursing station does not inform the nurse about its arrival.
- Secondly, mostly the medicines are delivered between 2 pm to 4 pm and this is the time when nurses are busy in activities like lunch, handover and treatment of old admission patients.
- Unawareness among the healthcare providers about the importance of timely administration of medicines.
- No follow up by the duty doctor about medicine administration

A MTAT register was placed in each ward, designed in order to monitor the process periodically.

S.N O	BED NO./IP NO.	TIME OF PRESCRIPTION	TIME ON PHYSICIAN ORDER SHEET	TIME OF INDENT	TIME OF RECEIVING
		Filled by RMO/ Nurse	Filled by RMO	Filled by nurse	Signed and filled by GDA

Figure 1: The Median Of Delay At Level 1A In Minutes

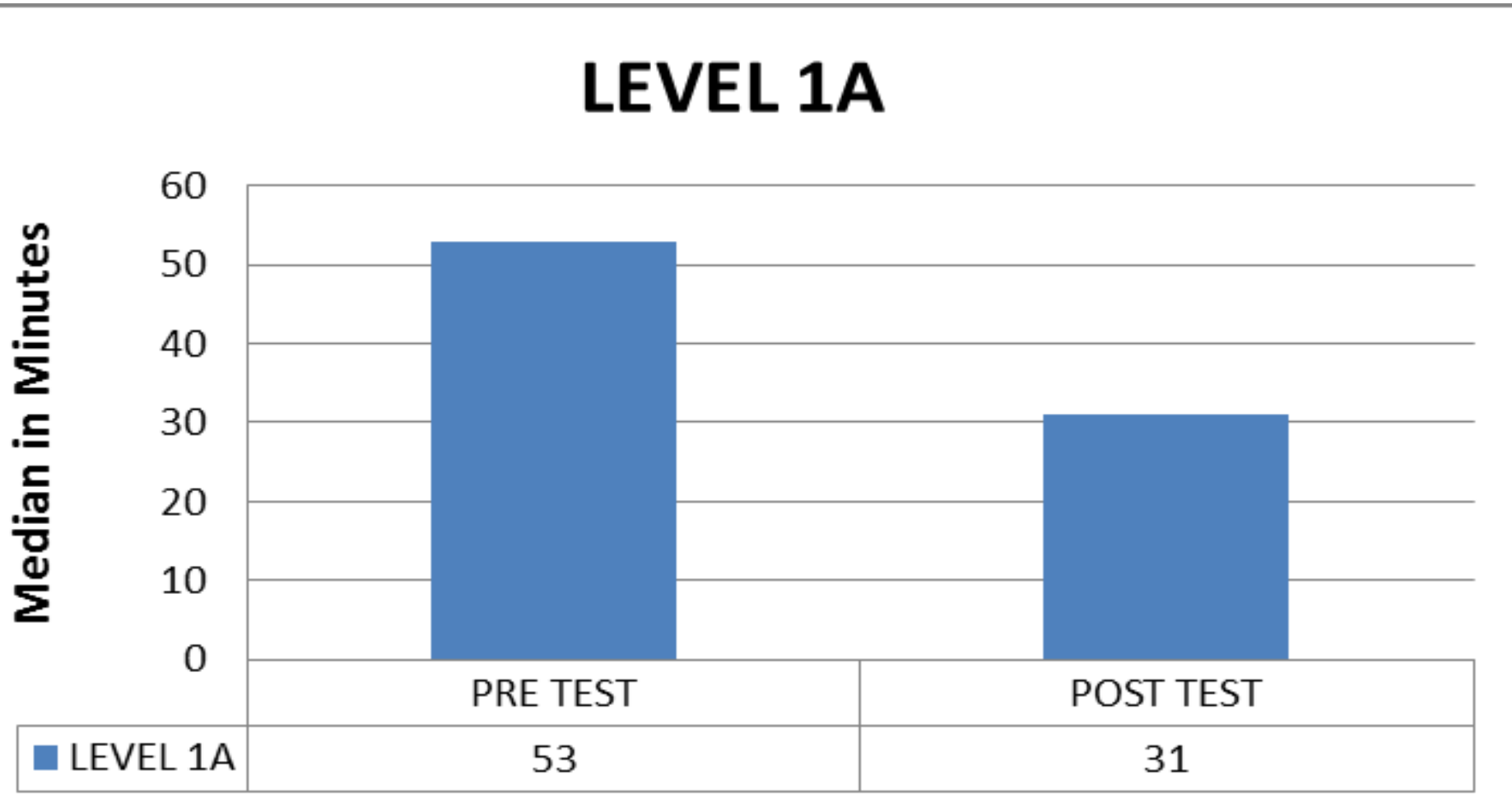


Figure 2: The Median Of Delay At Level 1B In Minutes

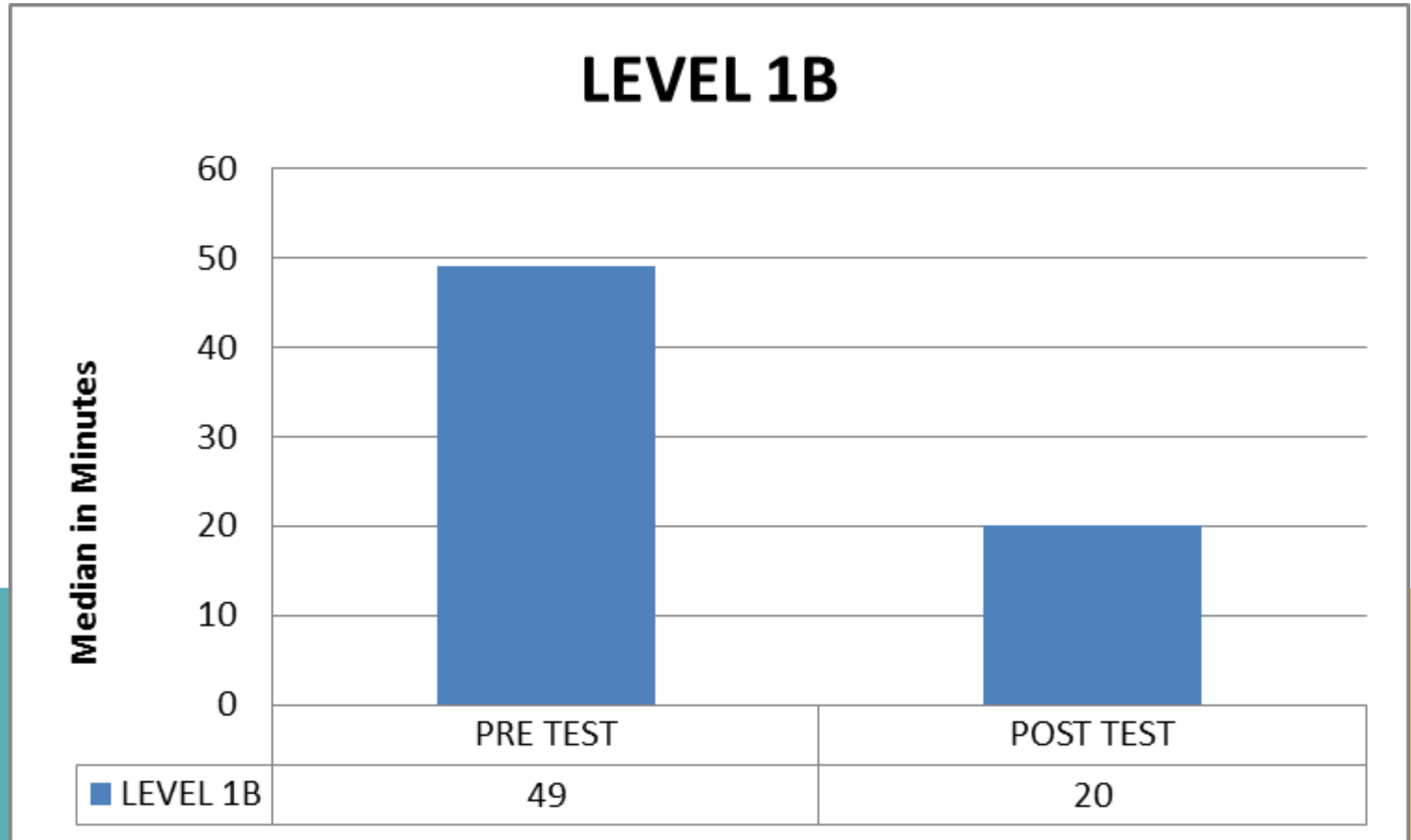
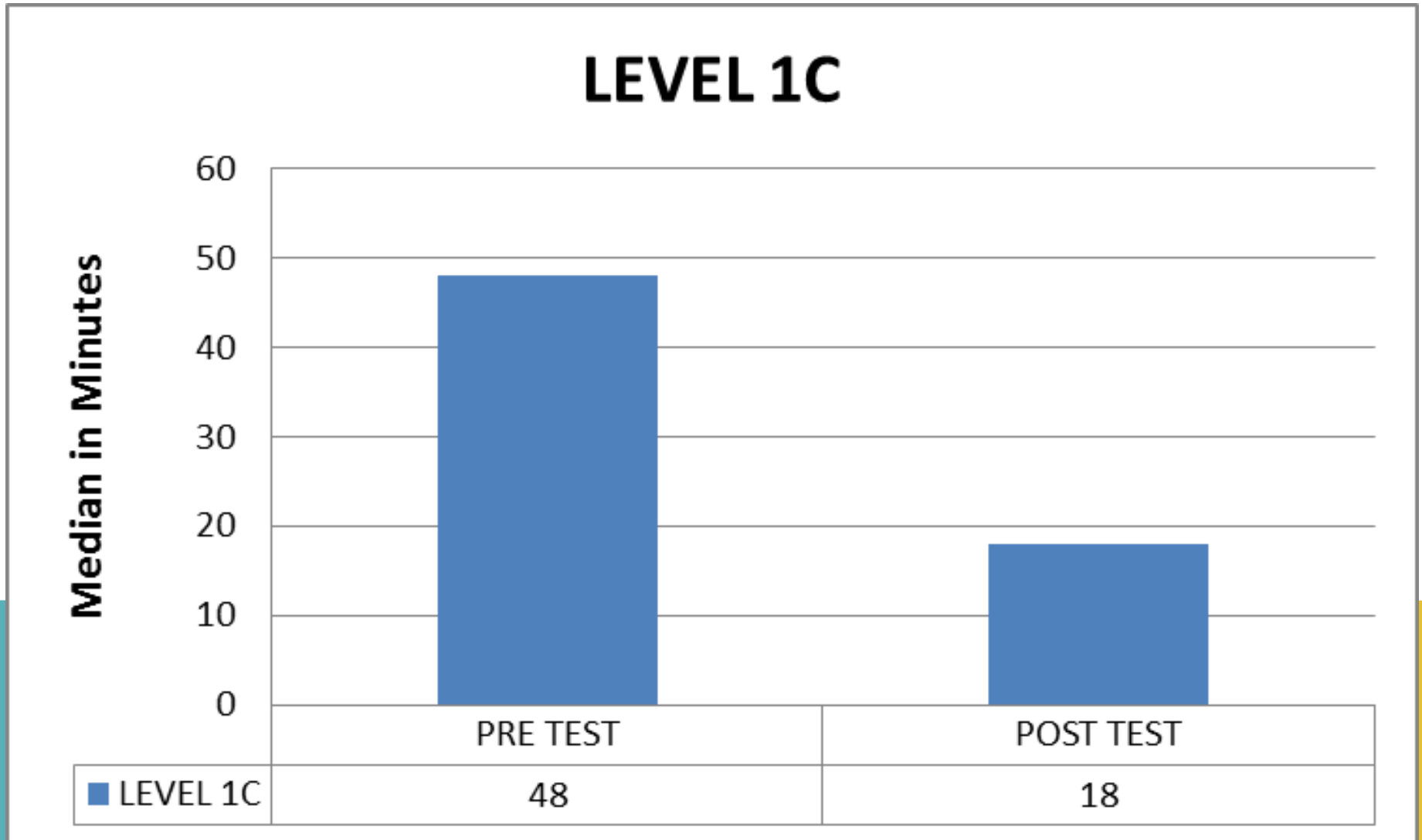


Figure 3: The Median Of Delay At Level 1C In Minutes



**Figure 4: Illustrates The Median Of Delay At Level 2
In Minutes**

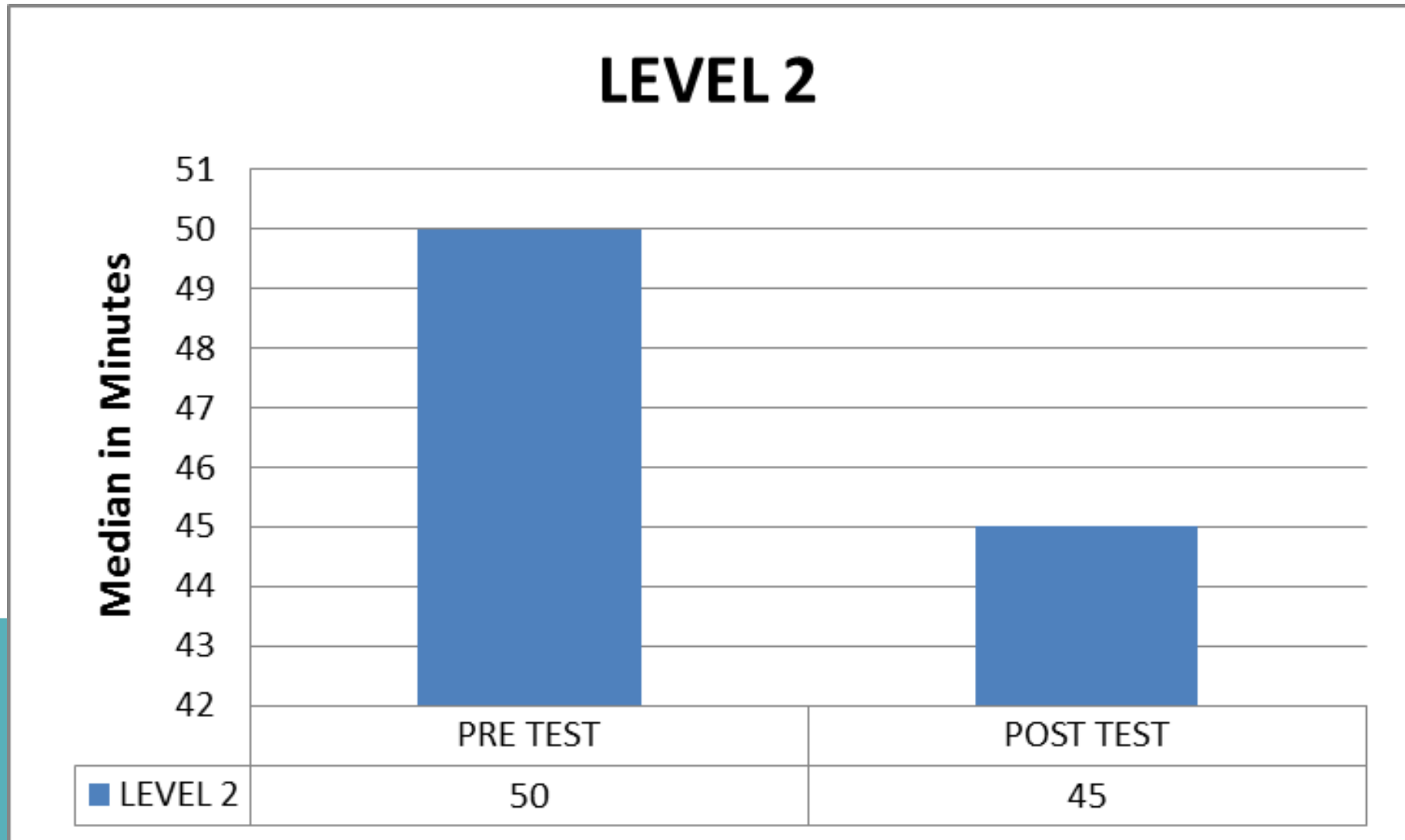


Figure 5: The Median Of Delay At Level 3 In Minutes

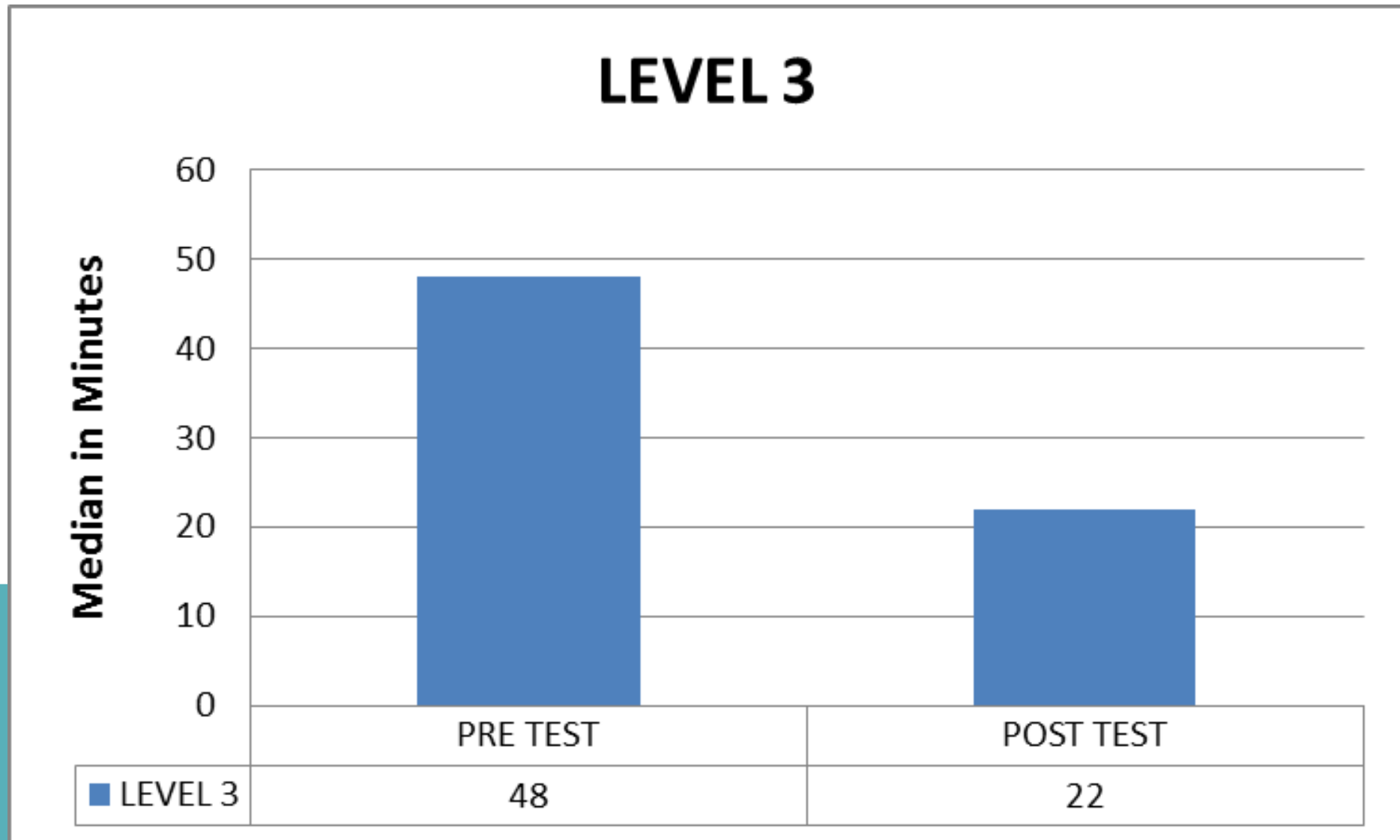


Figure 6: The Total First Medication Turnaround Time In Minutes

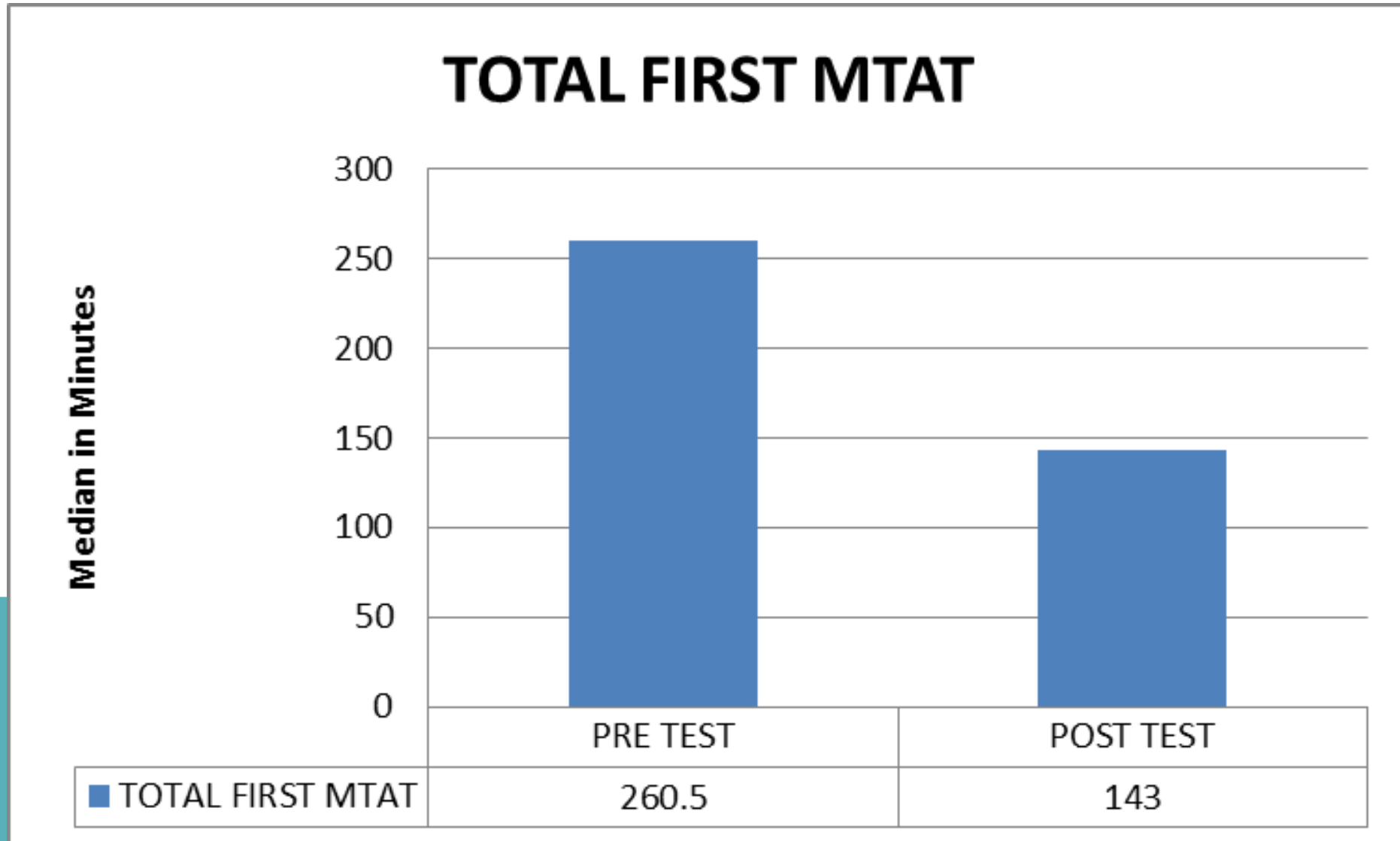


Figure 7: Distribution Of Three Levels Of Delay In Total First Medication Turnaround Time.

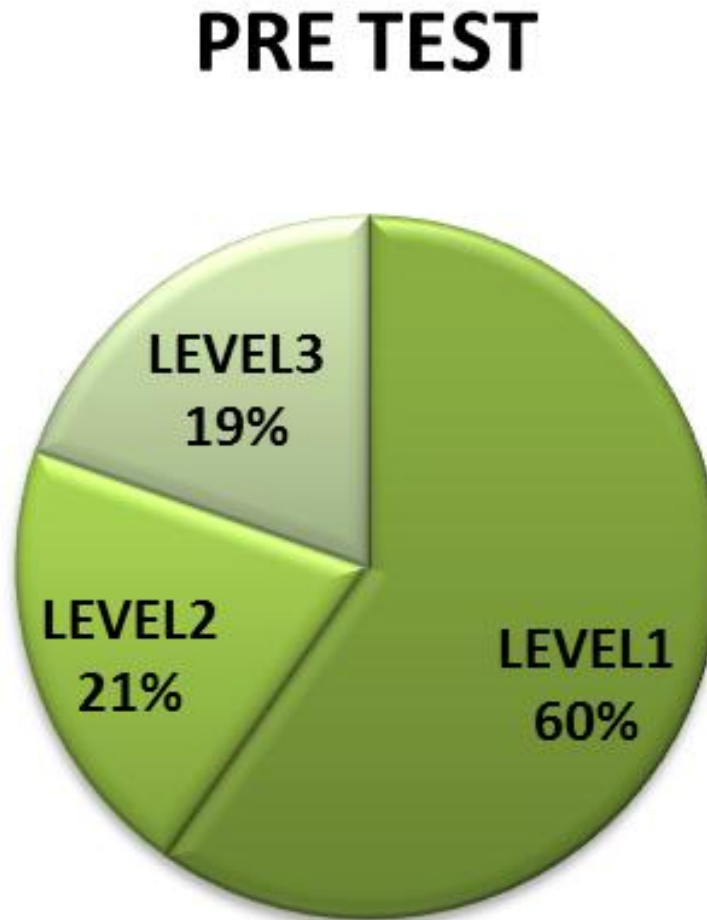


Figure 8: Pretest Distribution Of Three Levels Of Delay In Total First Medication Turnaround Time.

POST TEST

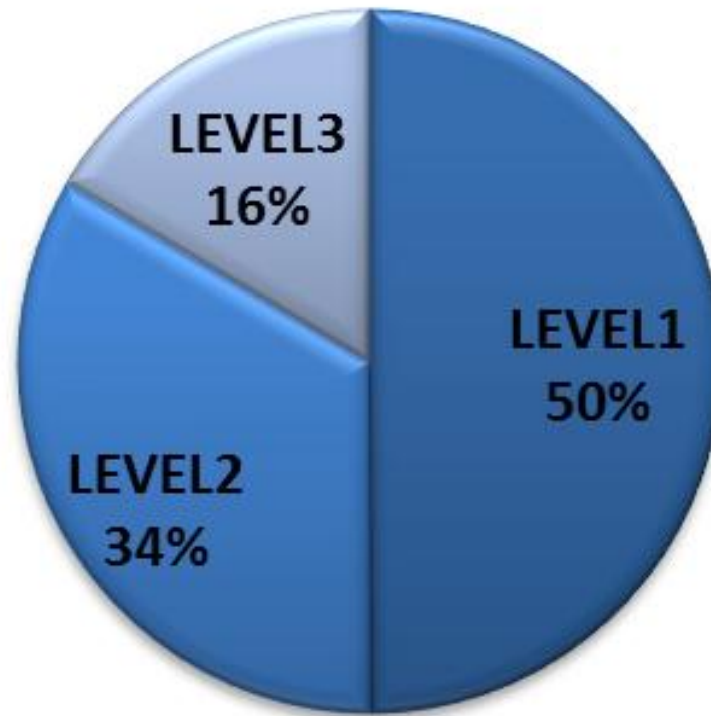
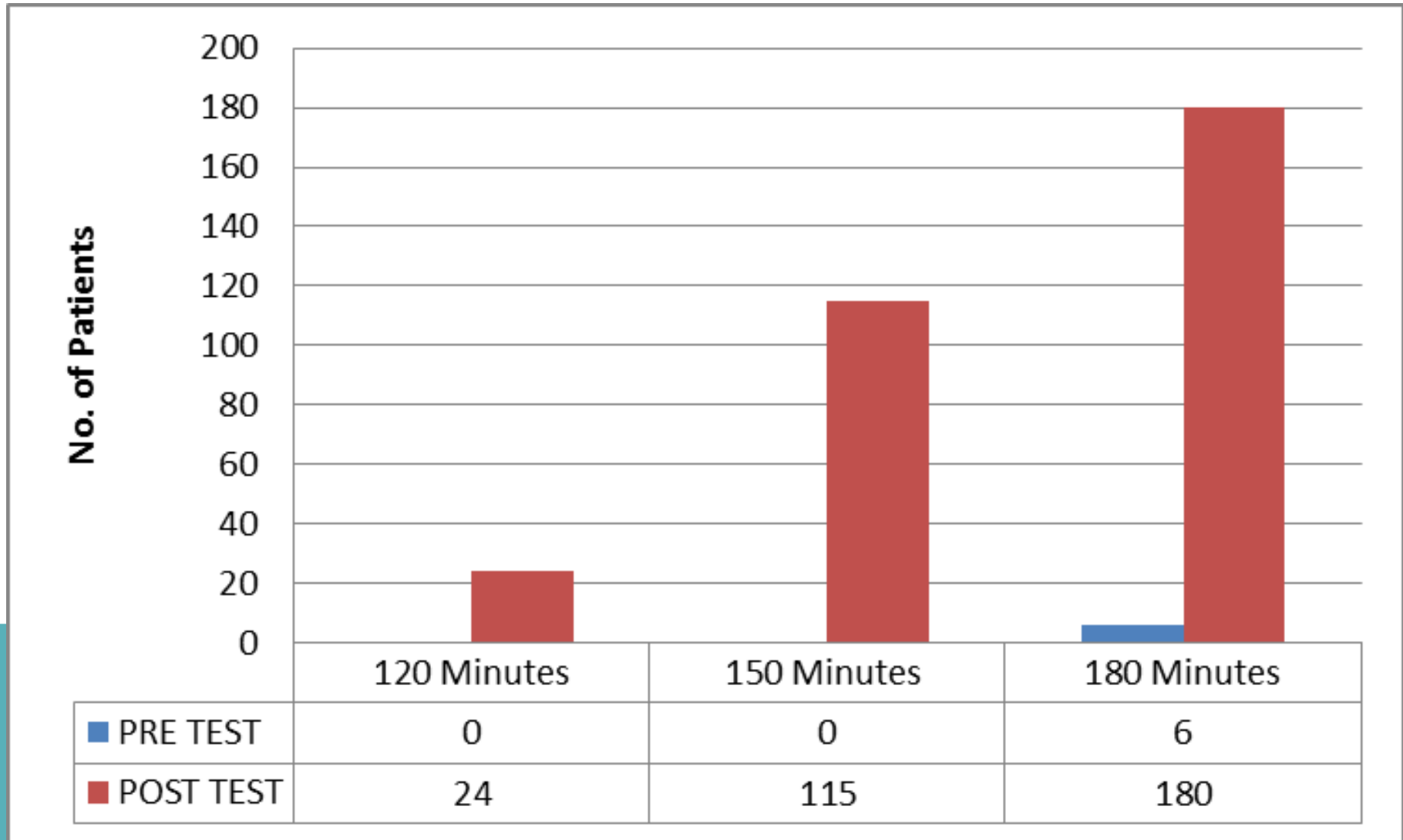


Figure 9: The Distribution Of Patients Who Received Medication Within Different Limits Of Time



T-TEST:

Applying the formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2} \right) \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

Mean1= 263

N1= 210

S.D pre test= 47.8174

Mean2= 144

N2= 180

S.D post test= 21.85386

The p value for pre and post test is less than .001. Hence, there is statistical change in MTAT after intervention therefore we reject null hypothesis.

RECOMMENDATIONS

- There should be a clear protocol for the activities involved in the process of medicine indentation and all the personnel should be oriented in this regard.

Role of Duty Doctor

- It is essential to supervise the treatment hence, it becomes necessary to do strict monitoring over the process by the Duty Doctor.
- They should see the patient, document it timely and write down the prescription independently or in consultation with the Consultant treating the patient.
- The physician order sheet should be immediately written by the Duty Doctor after the medicines have been prescribed by the Consultant/ Duty Doctor.

- Special attention should be given to new admissions and following interventions should be evaluated by experts for reducing the MTAT:
 1. One GDA out of the four should be solely placed for bringing the medicines for new patients. Observation over 2 hours is suggestive of that it takes only 7 to 9 minutes for a GDA to get medicine from pharmacy. It means even if we have 10 new admissions per day, approximately 1.5 hours of engagement can be spared for getting medicines from pharmacy.
 2. The first indent ie: Cannula, Germicidal Solution and Dressing should be a part of inventory as reserve and should be replaced at midnight when traffic at pharmacy is low.

A MTAT register should be placed in each ward designed in order to monitor the process periodically and will act as a self check thus reducing MTAT.

S.N O	BED NO./IP NO.	TIME OF PRESCRIPTION	TIME ON PHYSICIAN ORDER SHEET	TIME OF INDENT	TIME OF RECEIVING
		Filled by RMO/ Nurse	Filled by RMO	Filled by nurse	Signed and filled by GDA

CONCLUSION

The intervention of MTAT Register for new admitted patients has increased the accountability of all the persons involved in the process i.e. Nurse, Duty Doctor and GDA. Although Consultant and Pharmacy are still not accountable for the process but recording of activities puts a pressure on the system at all levels to fasten up the process. The regularity in maintaining the MTAT Register has significantly decreased the MTAT by 117.5 minutes.



THANK
YOU

