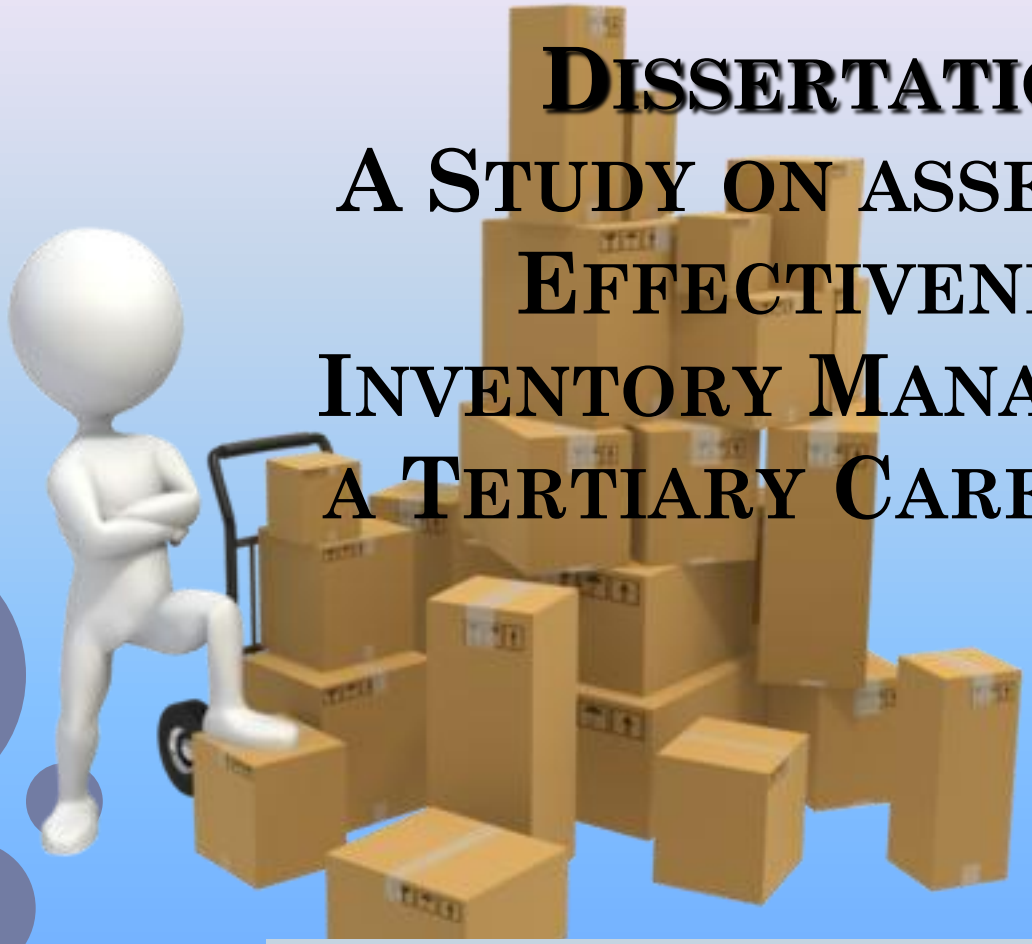
Dissertation on
A Study on assessing the Effectiveness of Inventory Management in a Tertiary Care Hospital



SANA SOOD
MBA HM 19
0208
Organization-Global Hospitals

What is inventory?

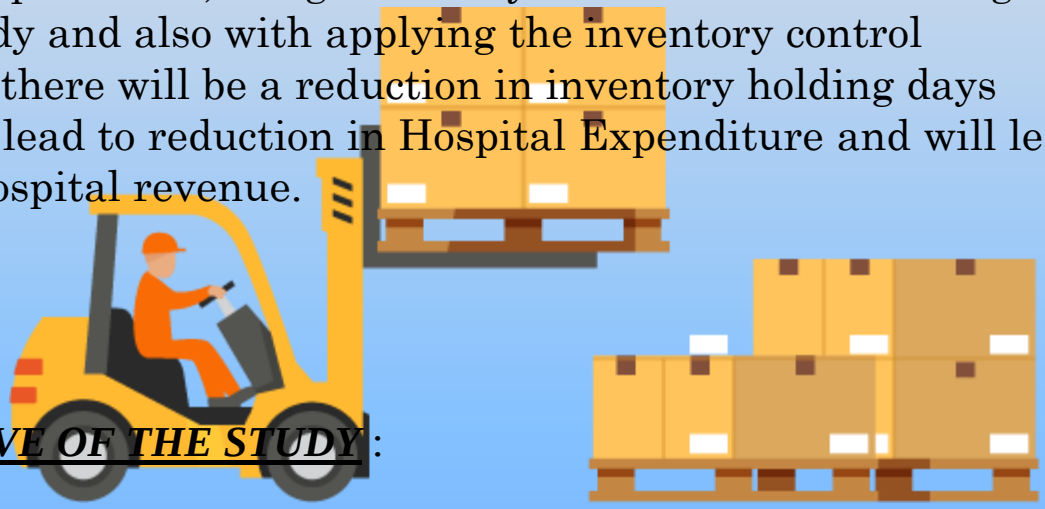
- *Inventory is the raw materials, component parts, work-in-process, or finished products that are held at a location in the supply chain.*

Why do we care?

- Sales growth: right inventory at the right place at the right time
- Cost reduction: less money tied up in inventory, inventory management, obsolescence

Title: A Study on assessing the effectiveness of Inventory Management in a Tertiary Care Hospital

Rationale : Since Drug expenditure is the main component of hospitals expenditure, Drug inventory control is an interesting area to study and also with applying the inventory control techniques there will be a reduction in inventory holding days which will lead to reduction in Hospital Expenditure and will lead to rise in hospital revenue.



➢***OBJECTIVE OF THE STUDY***:

1) To assess the current status of inventory management

2)To apply Appropriate Inventory Control tools

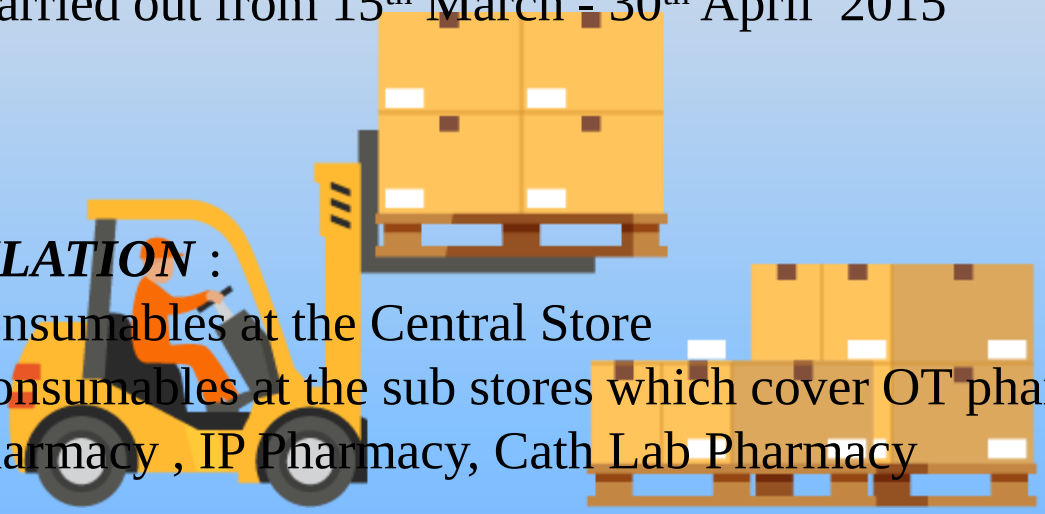
RESEARCH METHODOLOGY

- ***RESEARCH DESIGN*** :

The Study Design used for this project is Descriptive Observational study
The Data was closely Observed and Analyzed.

- ***DURATION*** **:-**

This Study was carried out from 15th March - 30th April 2015



➢ ***STUDY POPULATION*** :

- All drugs and consumables at the Central Store
- All Drugs and consumables at the sub stores which cover OT pharmacy, LICU Pharmacy, OP Pharmacy , IP Pharmacy, Cath Lab Pharmacy

•***SAMPLE SIZE*** **:**

•Central Stores=2759 Drugs and Consumables
•OT Pharmacy=886 Drugs and Consumables
•IP Pharmacy=1554 Drugs and Consumables
•Cath Lab Pharmacy=390 Drugs and Consumables.
•OP Pharmacy=1161 Drugs and Consumable

•***SAMPLING TECHNIQUE*** : The sampling technique selected was Random Sampling

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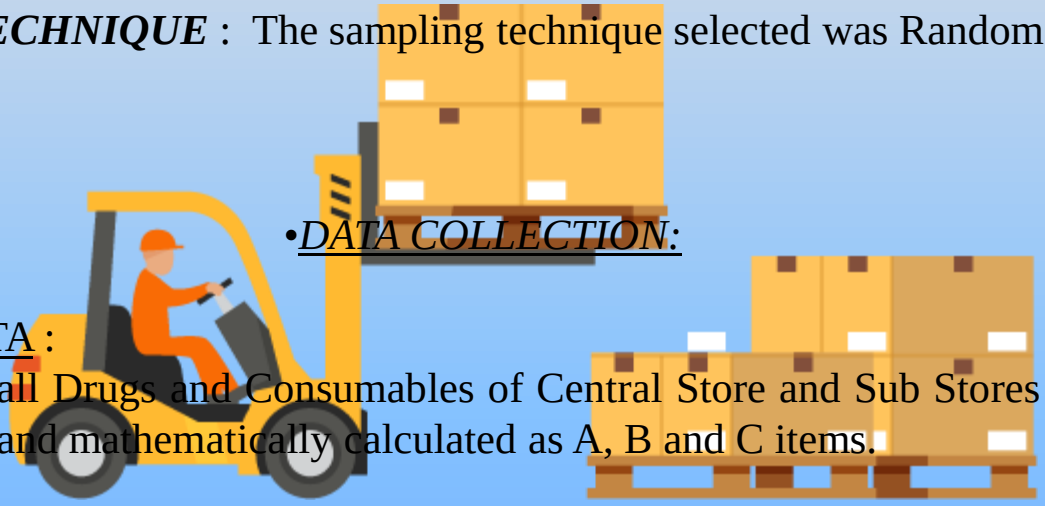


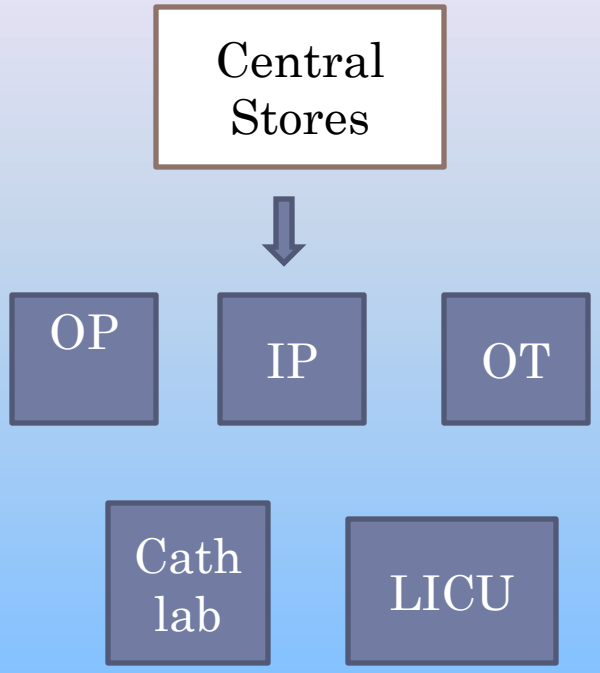
•*DATA COLLECTION:*

•PRIMARY DATA :
Information on all Drugs and Consumables of Central Store and Sub Stores were taken from the system and mathematically calculated as A, B and C items.

Criticality of the items were analyzed by doing the V, E, D analysis after interviewing the pharmacists of the sub-stores and HOD of the main store.

•SECONDARY DATA :
Information about the Drugs and Consumables were taken from the Kranium System of the Hospital. After Observing the data it was analyzed on Microsoft Excel.

PROCESS FLOW AT THE PHARMACY DEPARTMENT

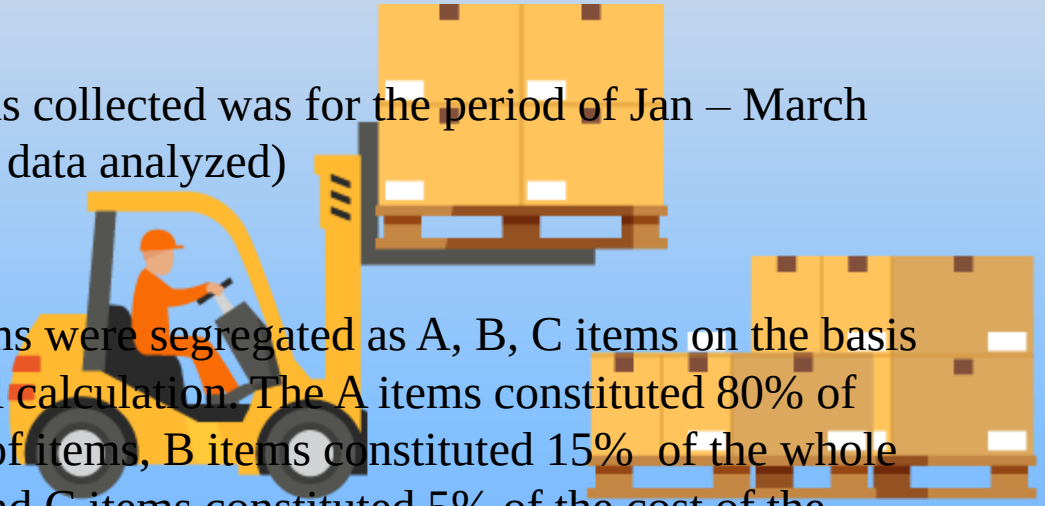


1) Sub-stores raises indent and sends to the main store on the system.
2) Central Stores raises Purchase order on the basis of daily requests of Drugs and Consumables.
3) Goods received at the Central Stores are checked for quality, expiry date and a Goods Receive Note(GRN) is signed.
4) After receiving, the goods are distributed to various stores as per requirement

•***Plan of Execution :***

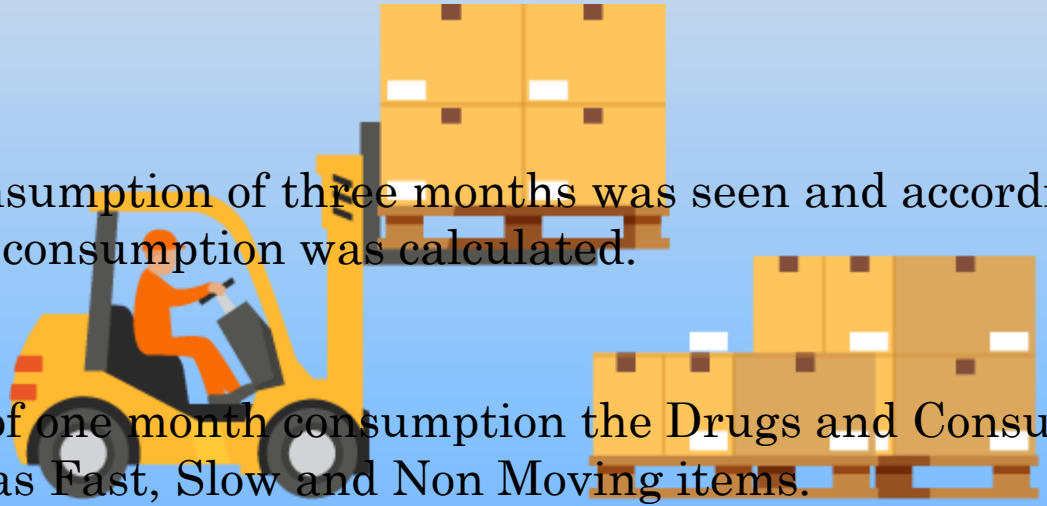
1) The Data was taken from the System which covered the main store also known as the Central Store and all the Sub-stores which included- OP pharmacy, IP pharmacy, Cath Lab Pharmacy, OT pharmacy, and LICU pharmacy.

2) The Data was collected was for the period of Jan – March 2016 (3 months data analyzed)



3) First the items were segregated as A, B, C items on the basis of mathematical calculation. The A items constituted 80% of the whole cost of items, B items constituted 15% of the whole cost of items, and C items constituted 5% of the cost of the whole items.

4)After that the items were segregated on the basis of criticality of drugs in that particular department as V, E, D(Vital, Essential and Desirable) Items after interviewing the pharmacists and HOD of the Department.



5) Then the Consumption of three months was seen and according to that one month consumption was calculated.

6)On the basis of one month consumption the Drugs and Consumables were classified as Fast, Slow and Non Moving items.

7) After the analysis of data on the basis of “A,B , C”, “V, E D” and F, S, N Items the calculation on the basis of per month consumption for reduction in Inventory holding days was made as follows:-

•Central Store = 14 Days stock +7 Days Safety Stock(For Vital Items),

Total 21Days

= 14 Days stock + 4 Days Stock (For Essential items),

Total 18 Days

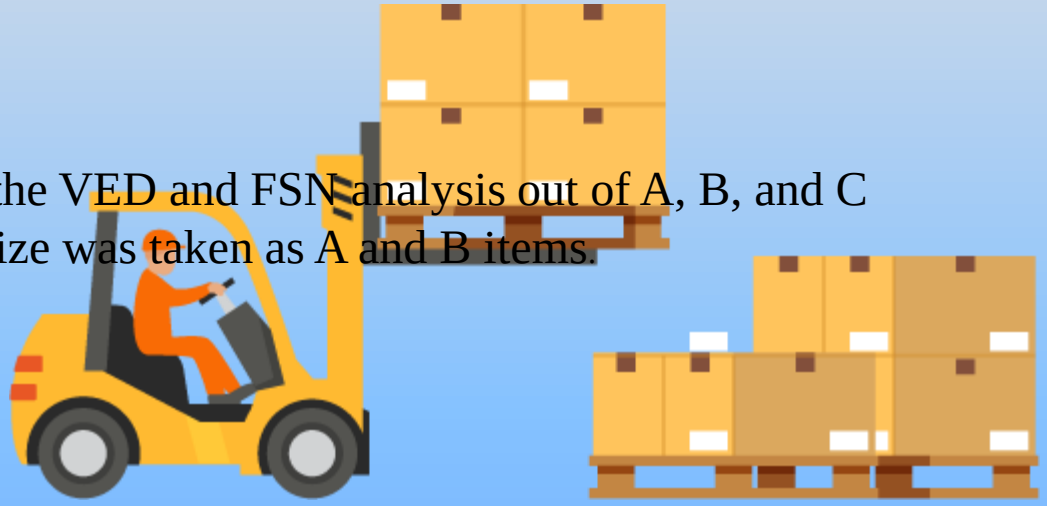
= 14 Days stock +0 Days Stock (For Desirable Items),

Total 14Days

- OT pharmacy = Total 7 days stock
- LICU Pharmacy =Total 7 days stock
- IP Pharmacy =Total 7 Days Stock
- OP Pharmacy =Total 7 days stock
- Cath Lab Pharmacy=Total 7days stock

8) After that the Total no of Stock was seen in different stores and surplus stock which was present was sent to the supplier and incase of less stock the stock was ordered weekly.

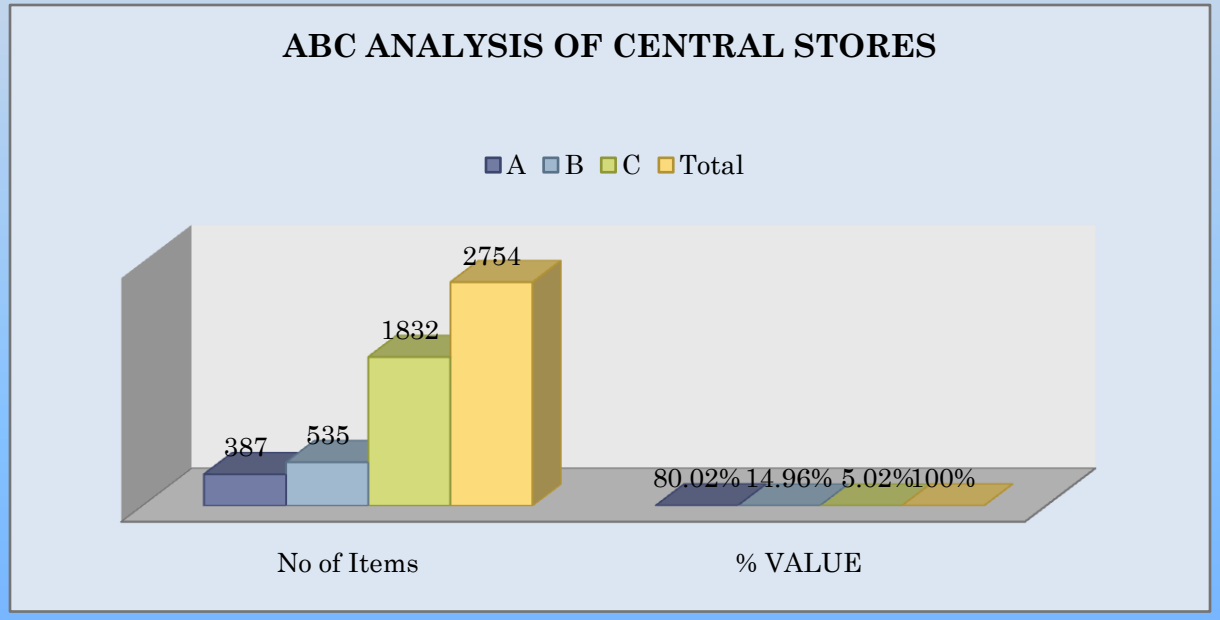
9) To conduct the VED and FSN analysis out of A, B, and C items sample size was taken as A and B items.



Analysis

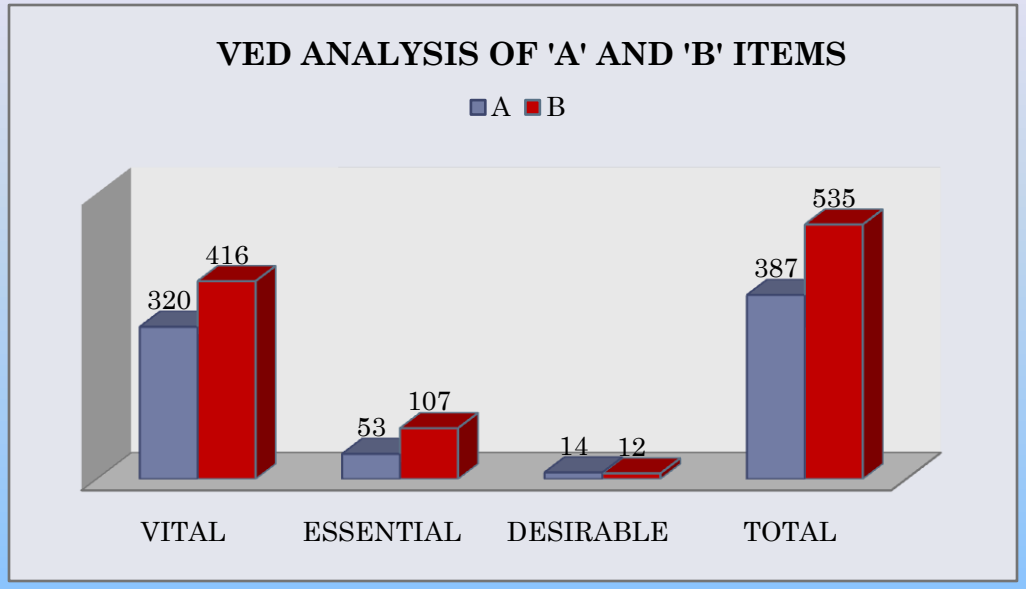
Analysis of **Central Stores** :

- 1) ABC Analysis of Central Stores



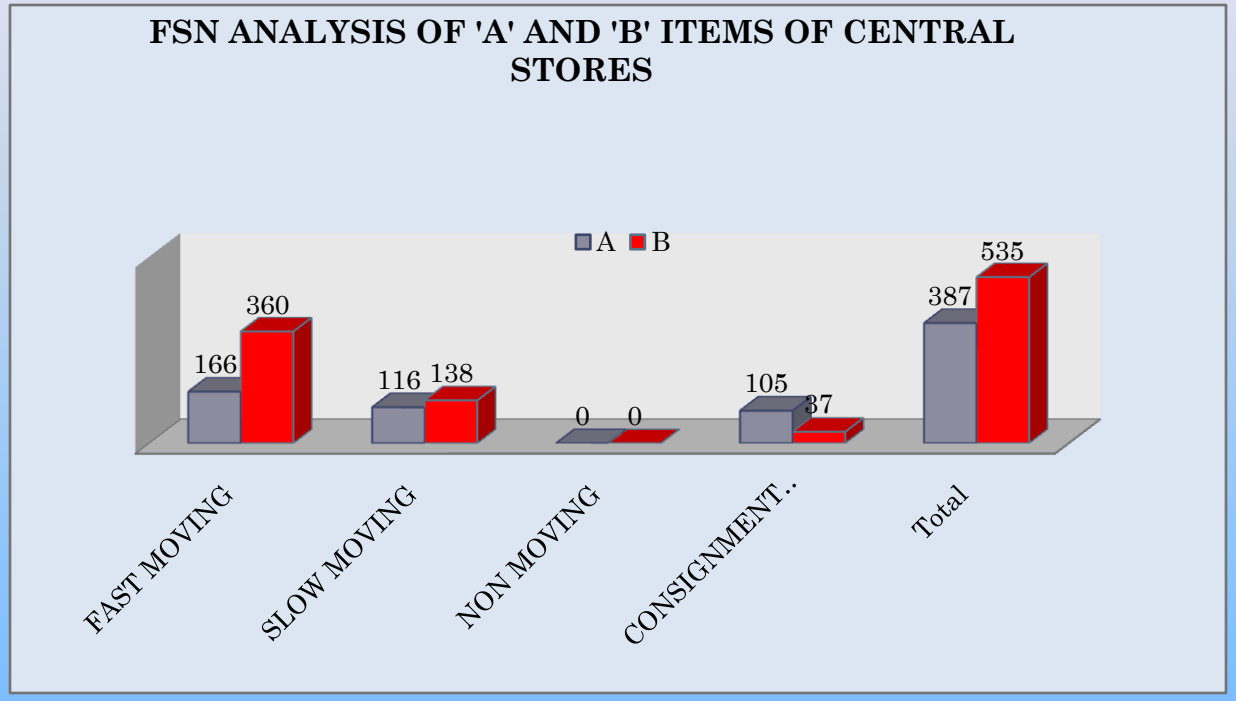
From the above figure we can find out that out of total Drugs and Consumables which were 2754, The A items are 387 in number which constitutes about 80.02% of the total value of items. The B items were 535 in number which constituted about 14.96% of the total value of items. The C items were 1832 in number which constituted around 5.02% of the total value of items

VED Analysis of Central Stores:



Out of the total sample size of 922 items it was seen that there were 320 Vital items, 53 Essential items and 14 Desirable Items under “A” category and there were 416 Vital Items, 107 Essential items and 12 Desirable Items under “B” Category.

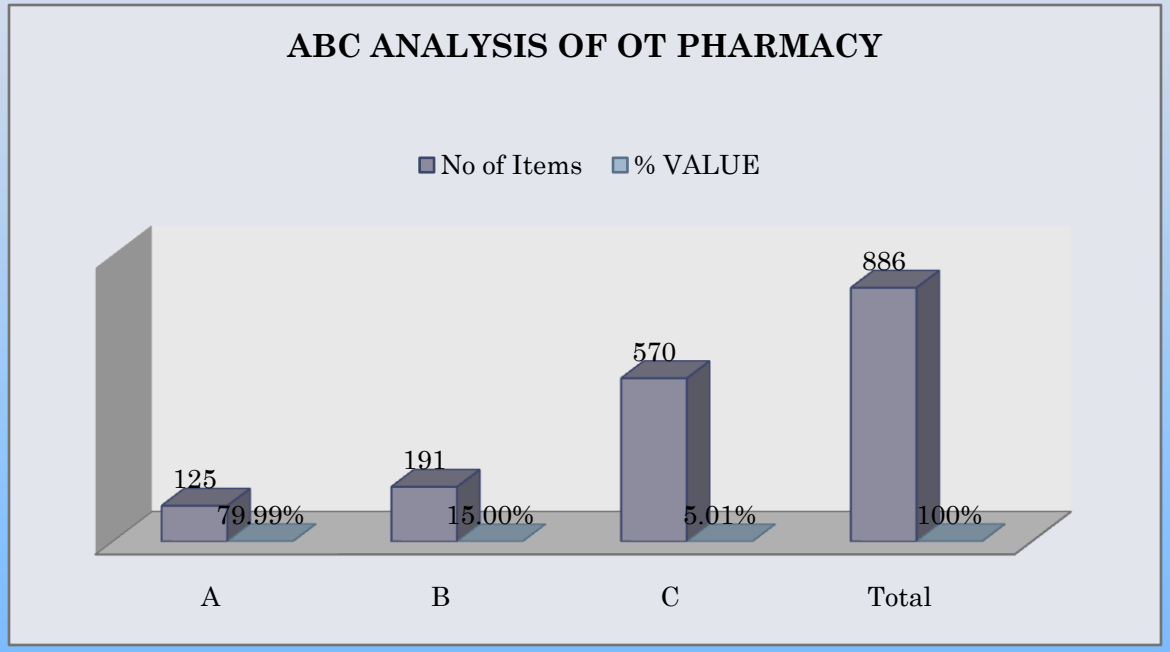
FSN Analysis of Central Stores



_Out of the total sample size of 922 items it was seen that there were 166 Fast moving Items , 116 Slow moving items, 0 non moving items and 105 Consignment Basis Stock under “A” category and there were 360 Fast Moving Stock, 138 Slow moving stock, 0 Non moving Stock and 37 Consignment Basis Stock under “B” Category

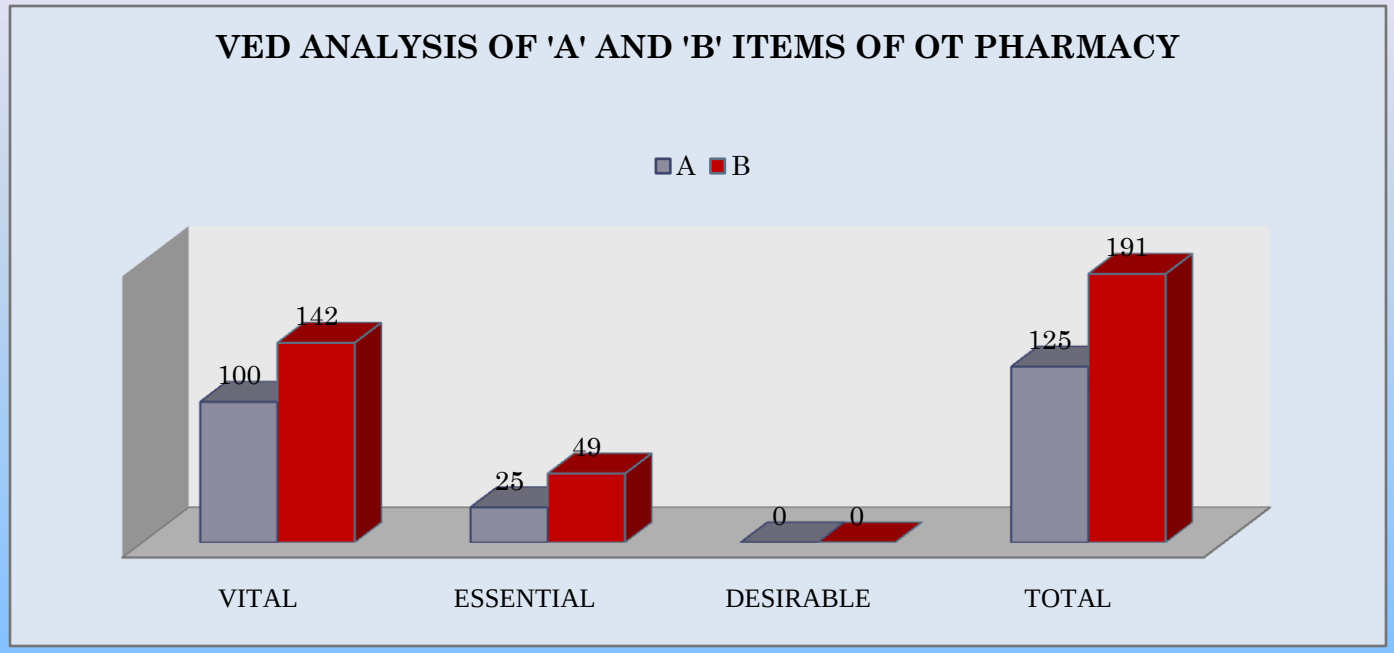
Analysis of OT Pharmacy:

1) ABC Analysis of OT Pharmacy



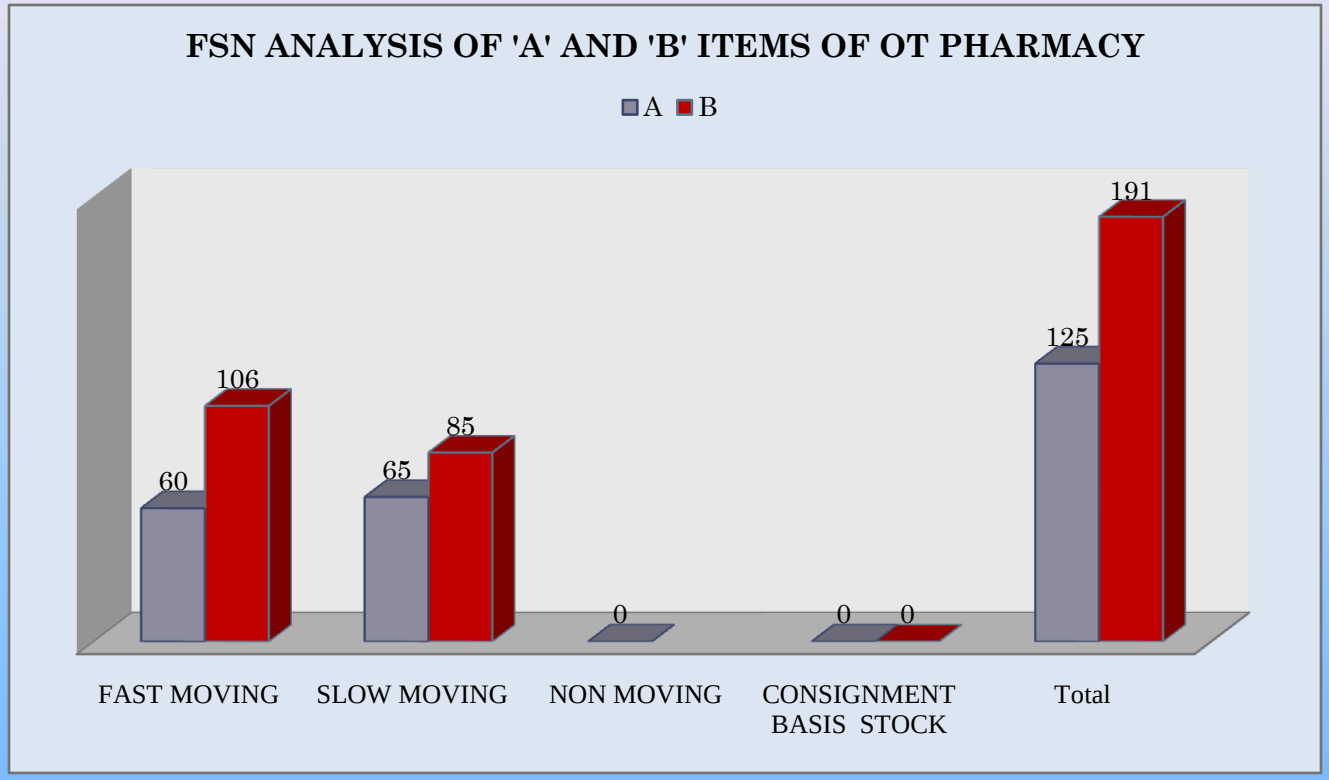
From the above figure we can find out that out of total Drugs and Consumables which were 886, The A items are 125 in number which constitutes about 79.99% of the total value of items. The B items were 191 in number which constituted about 15.00% of the total value of items. The C items were 570 in number which constituted around 5.01%% of the total value of items

VED Analysis of OT Pharmacy:



Out of the total sample size of 316 items it was seen that there were 100 Vital items, 25 Essential items and 0 Desirable Items under “A” category and there were 142 Vital Items, 49 Essential items and 0 Desirable Items under “B” Category.

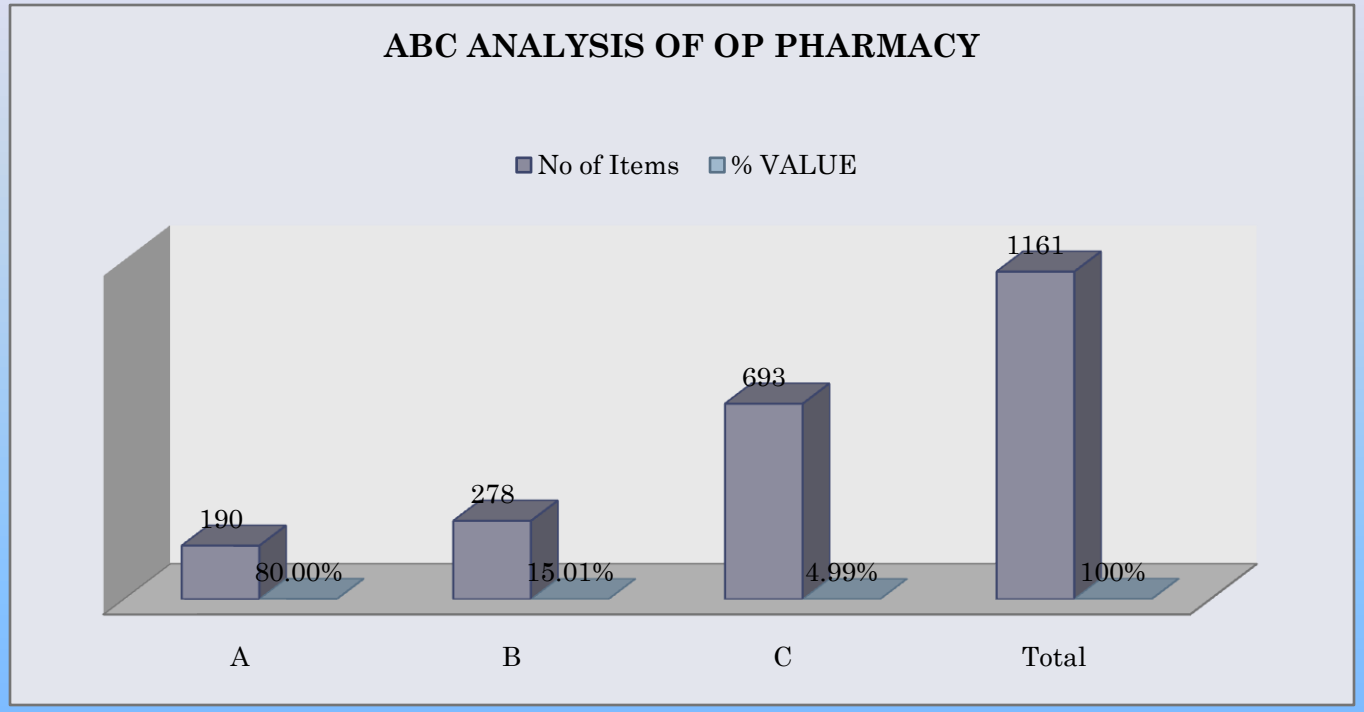
FSN Analysis of OT Pharmacy:



Out of the total sample size of 316 items it was seen that there were 60 Fast moving Items , 65 Slow moving items, 0 non moving items and 0 Consignment Basis Stock under “A” category and there were 106 Fast Moving Stock, 85 Slow moving stock, 0 Non moving Stock and 0 Consignment Basis Stock under “B” Category.

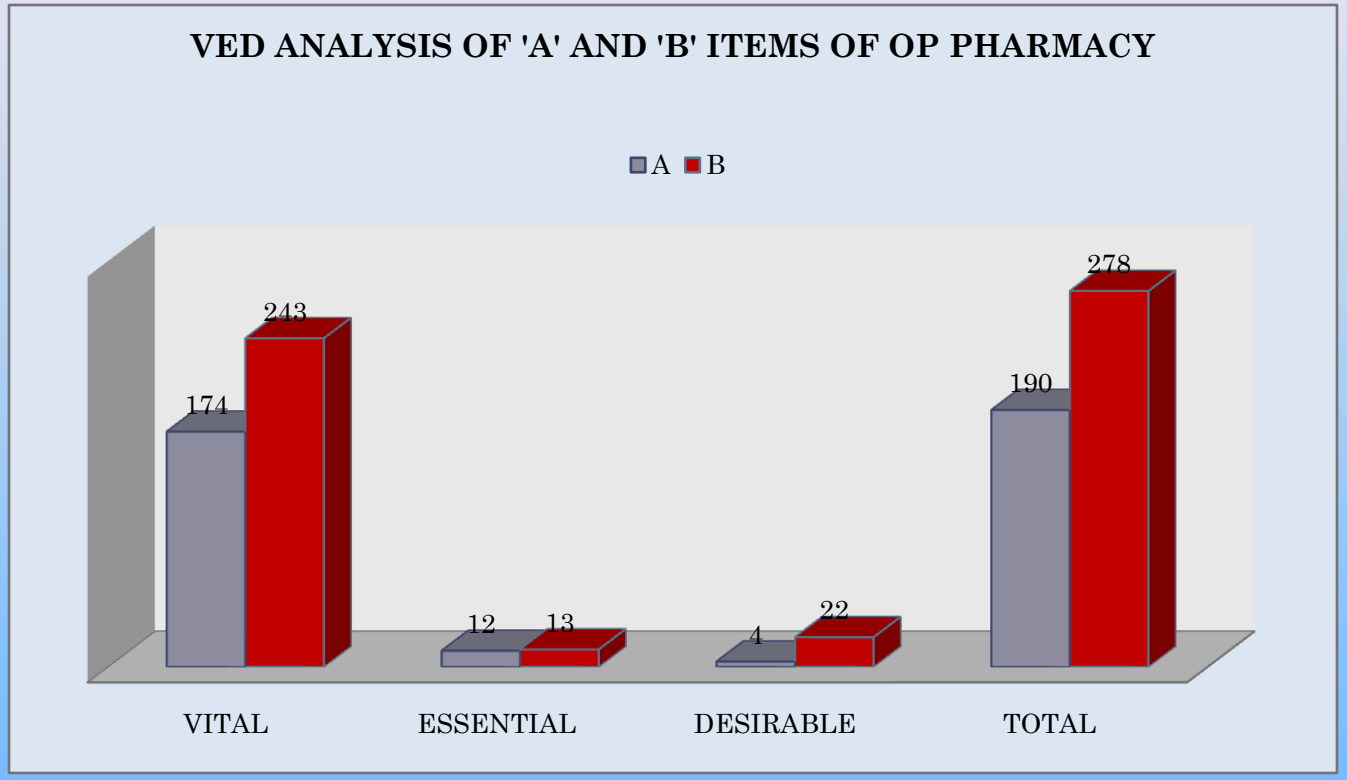
Analysis of OP Pharmacy:

1) ABC Analysis of OP Pharmacy



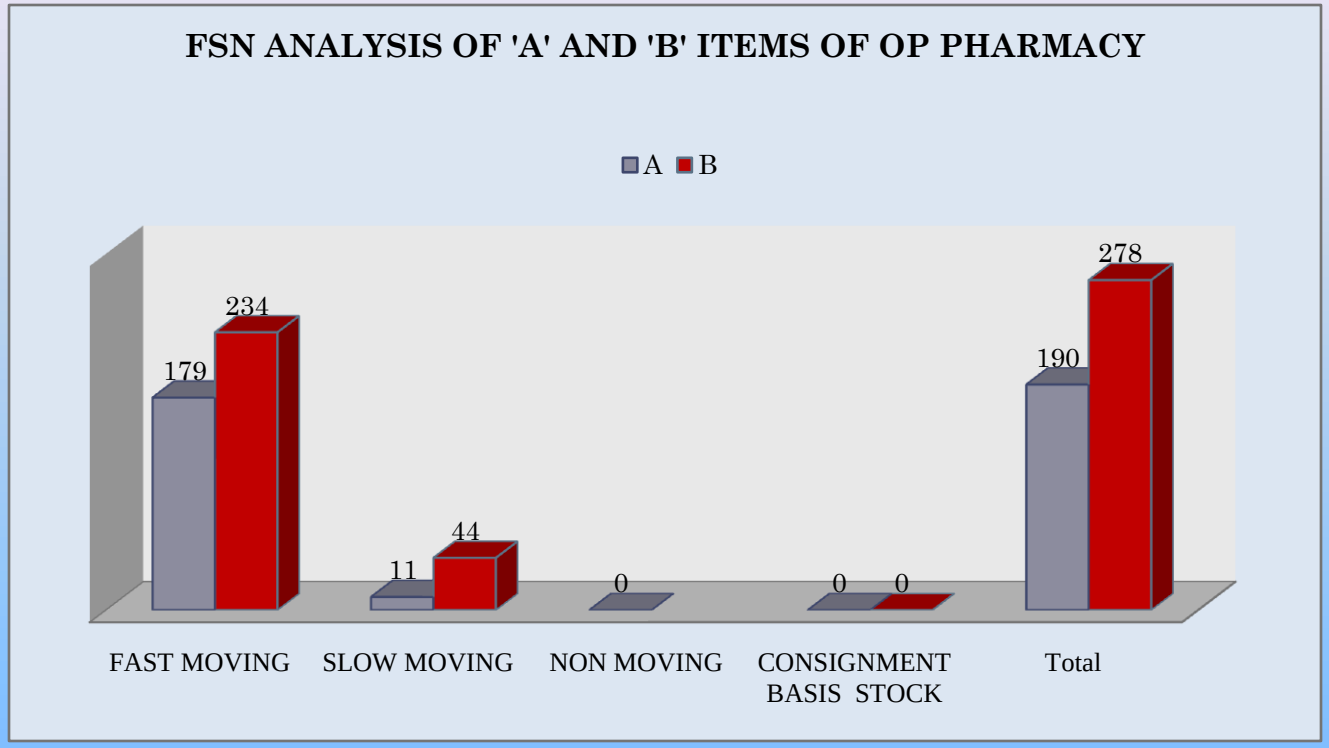
From the above figure we can find out that out of total Drugs and Consumables which were 1161, The A items are 190 in number which constitutes about 80.00% of the total value of items. The B items were 278 in number which constituted about 15.02% of the total value of items. The C items were 693 in number which constituted around 4.99% of the total value of items

VED Analysis of OP Pharmacy:



Out of the total sample size of 468 items it was seen that there were 174 Vital items,12 Essential items and 4 Desirable Items under “A” category and there were 243 Vital Items, 13 Essential items and 22 Desirable Items under “B” Category.

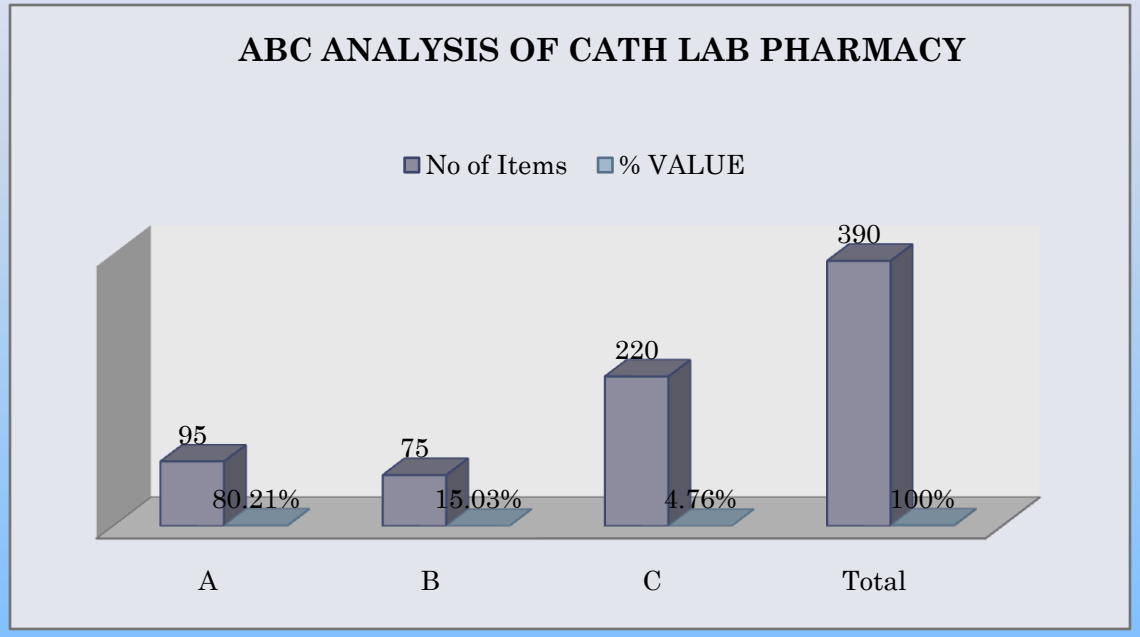
FSN Analysis of OP Pharmacy:



Out of the total sample size of 468 items it was seen that there were 179 Fast moving Items , 11 Slow moving items, 0 non moving items and 0 Consignment Basis Stock under “A” category and there were 234 Fast Moving Stock, 44 Slow moving stock, 0 Non moving Stock and 0 Consignment Basis Stock under “B” Category .

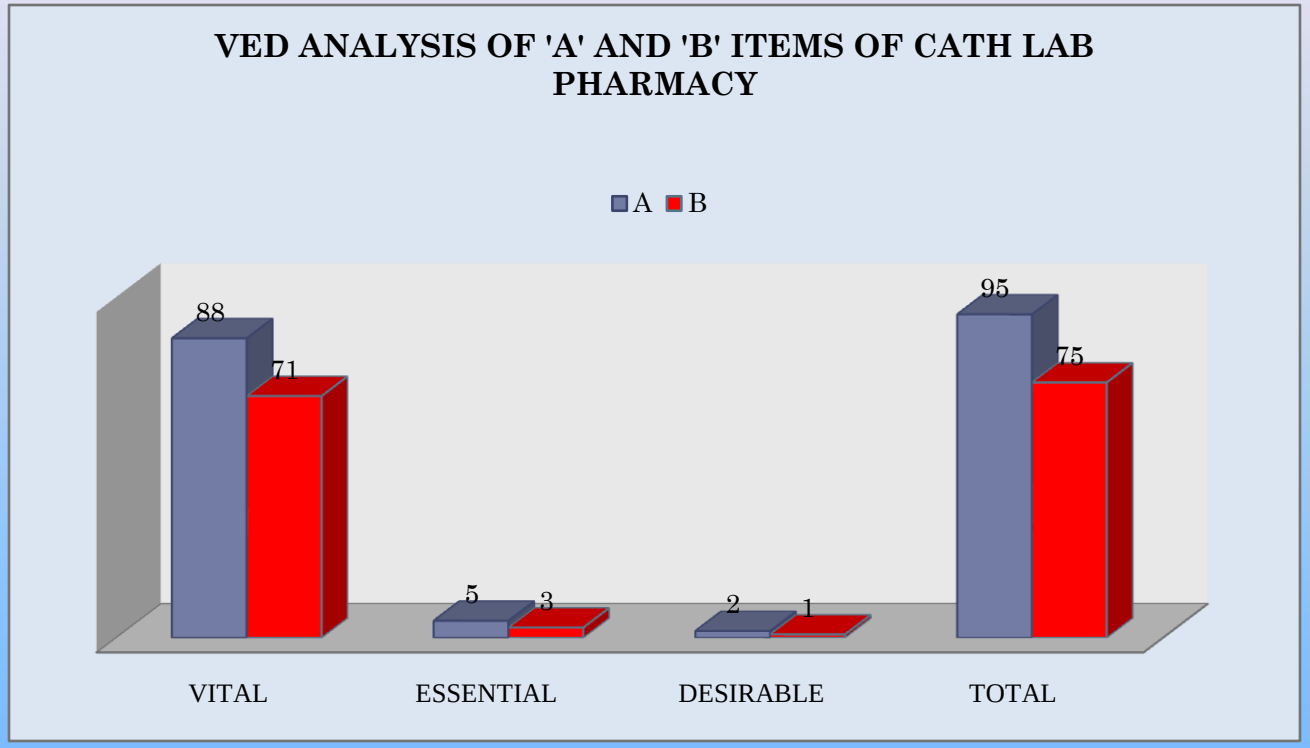
Analysis of Cath Lab Pharmacy:

1) ABC Analysis of Cath Lab



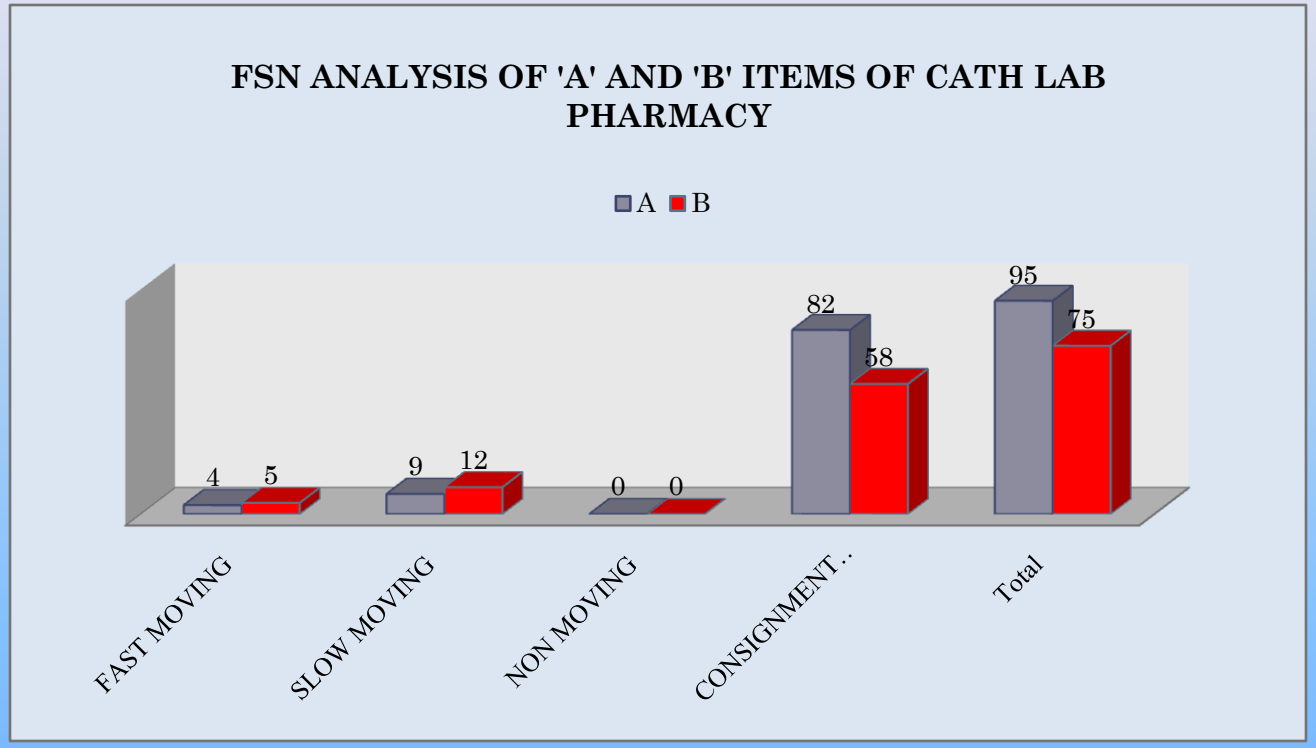
From the above figure we can find out that out of total Drugs and Consumables which were 390, The A items are 95 in number which constitutes about 80.21% of the total value of items. The B items were 75 in number which constituted about 15.03% of the total value of items. The C items were 220 in number which constituted around 4.76% of the total value of items

VED Analysis of Cath Lab Pharmacy



Out of the total sample size of 170 items it was seen that there were 88 Vital items, 5 Essential items and 2 Desirable Items under “A” category and there were 72 Vital Items, 3 Essential items and 1 Desirable Items under “B” Category.

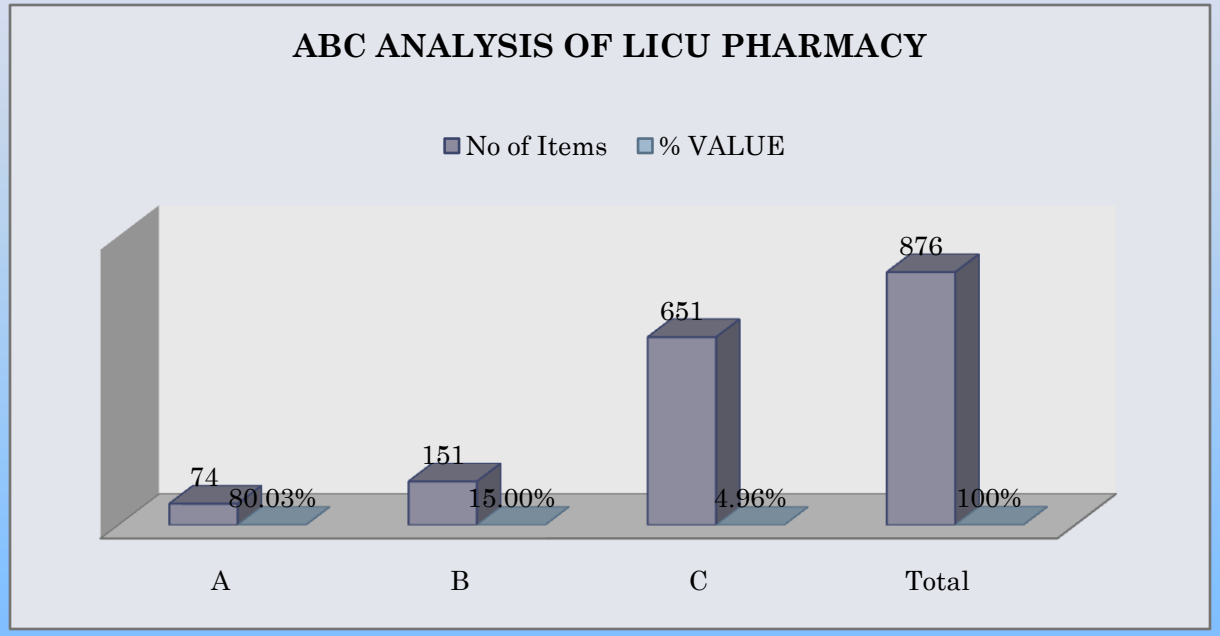
FSN Analysis of Cath Lab Pharmacy:



Out of the total sample size of 170 items it was seen that there were 4 Fast moving Items , 9 Slow moving items, 0 non moving items and 82 Consignment Basis Stock under “A” category and there were 5 Fast Moving Stock, 12 Slow moving stock, 0 Non moving Stock and 58 Consignment Basis Stock under “B” Category.

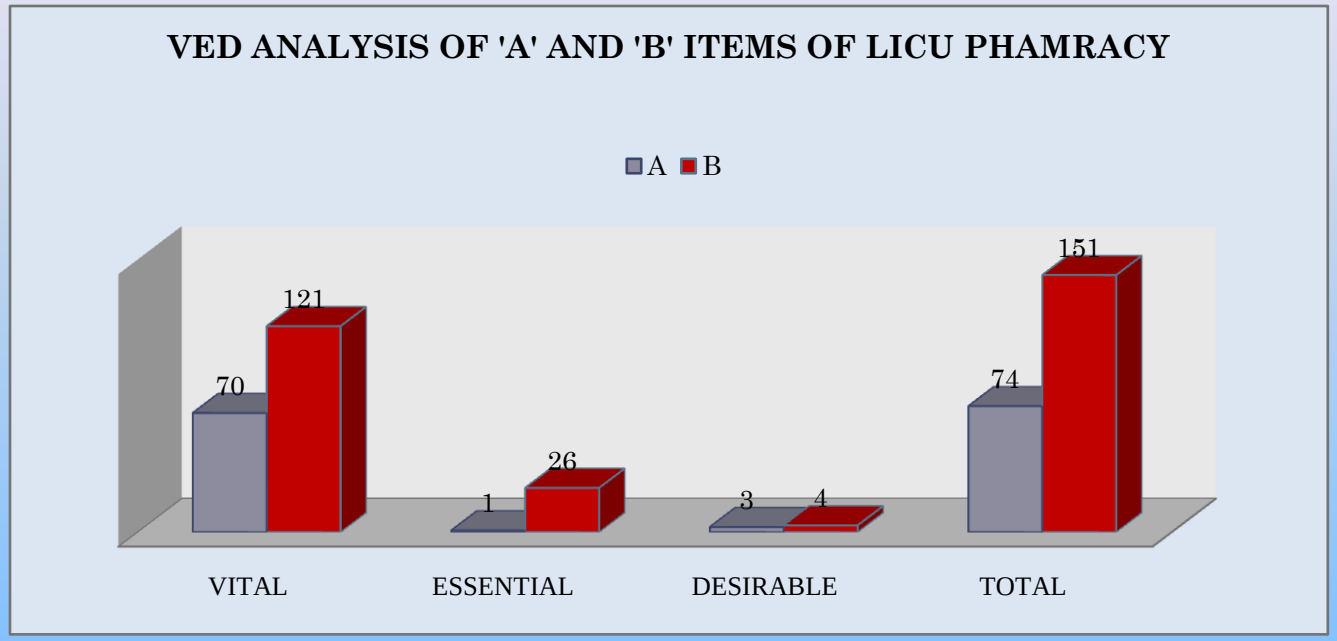
Analysis of LICU Pharmacy

1) ABC Analysis of LICU Pharmacy



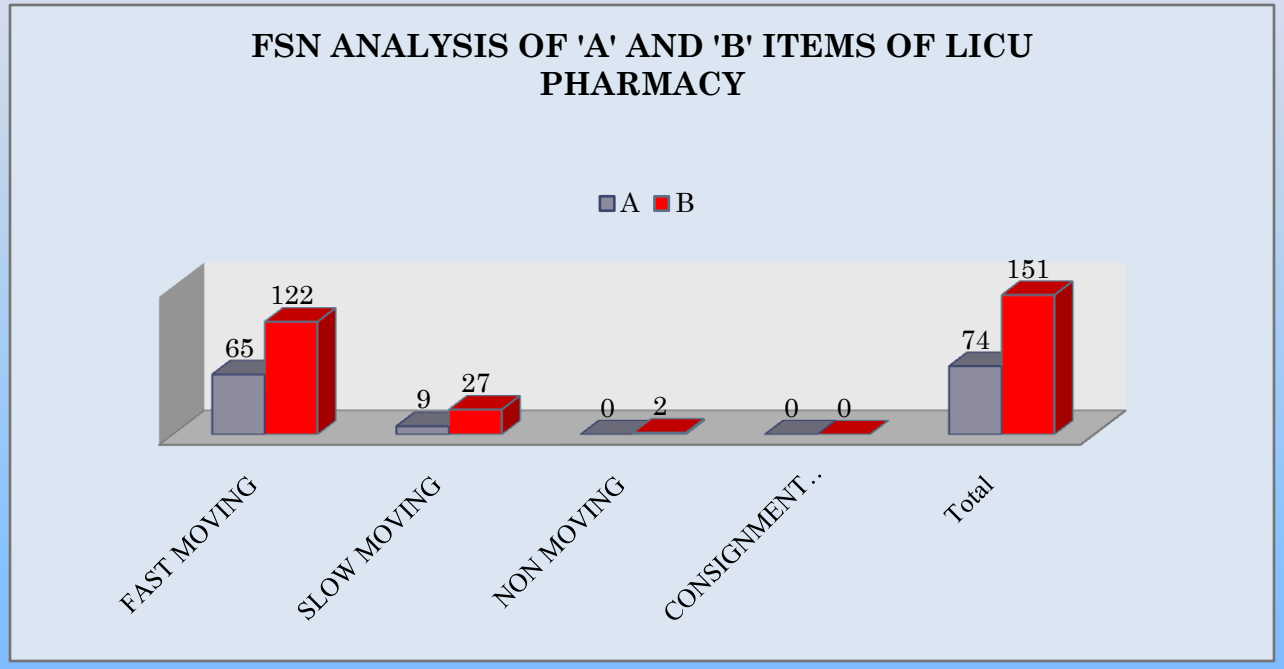
From the above figure we can find out that out of total Drugs and Consumables which were 876, The A items are 74 in number which constitutes about 80.00% of the total value of items. The B items were 151 in number which constituted about 15.00% of the total value of items. The C items were 651 in number which constituted around 4.96% of the total value of items

VED Analysis of LICU Pharmacy



Out of the total sample size of 225 items it was seen that there were 70 Vital items,1 Essential items and 3 Desirable Items under “A” category and there were 121 Vital Items, 26 Essential items and 4 Desirable Items under “B” Category.

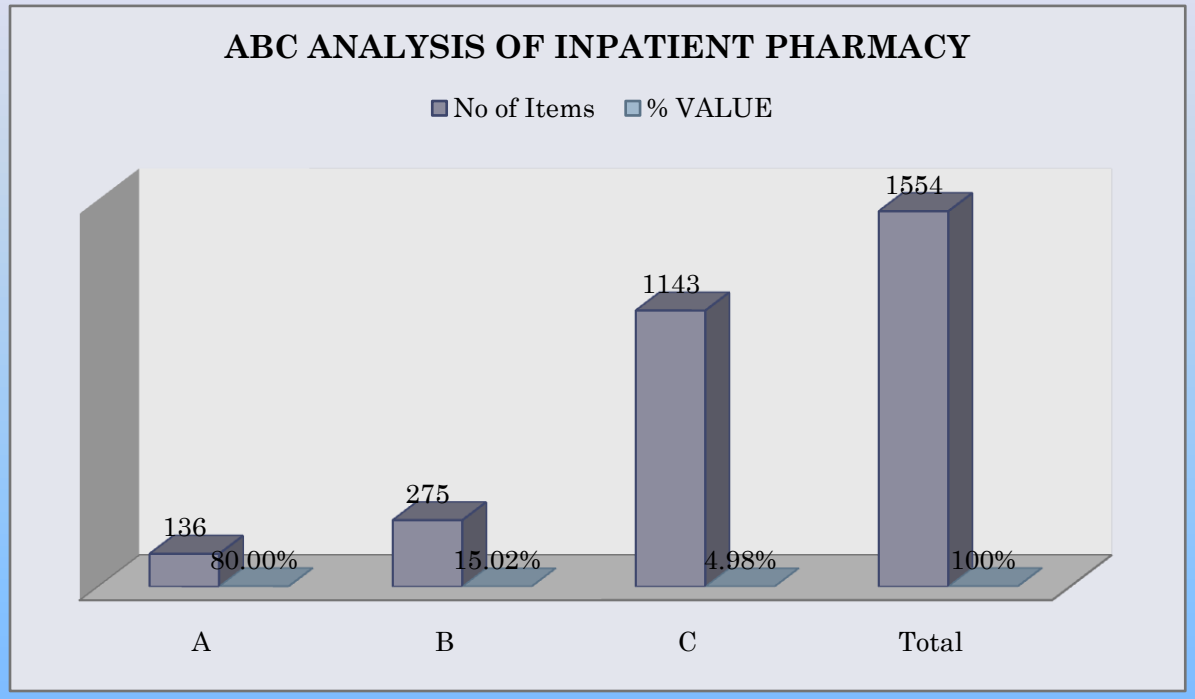
FSN Analysis of LICU Pharmacy



Out of the total sample size of 225 items it was seen that there were 65 Fast moving Items , 9 Slow moving items, 0 non moving items and 0 Consignment Basis Stock under “A” category and there were 122 Fast Moving Stock, 27 Slow moving stock, 2 Non moving Stock and 0 Consignment Basis Stock under “B” Category.

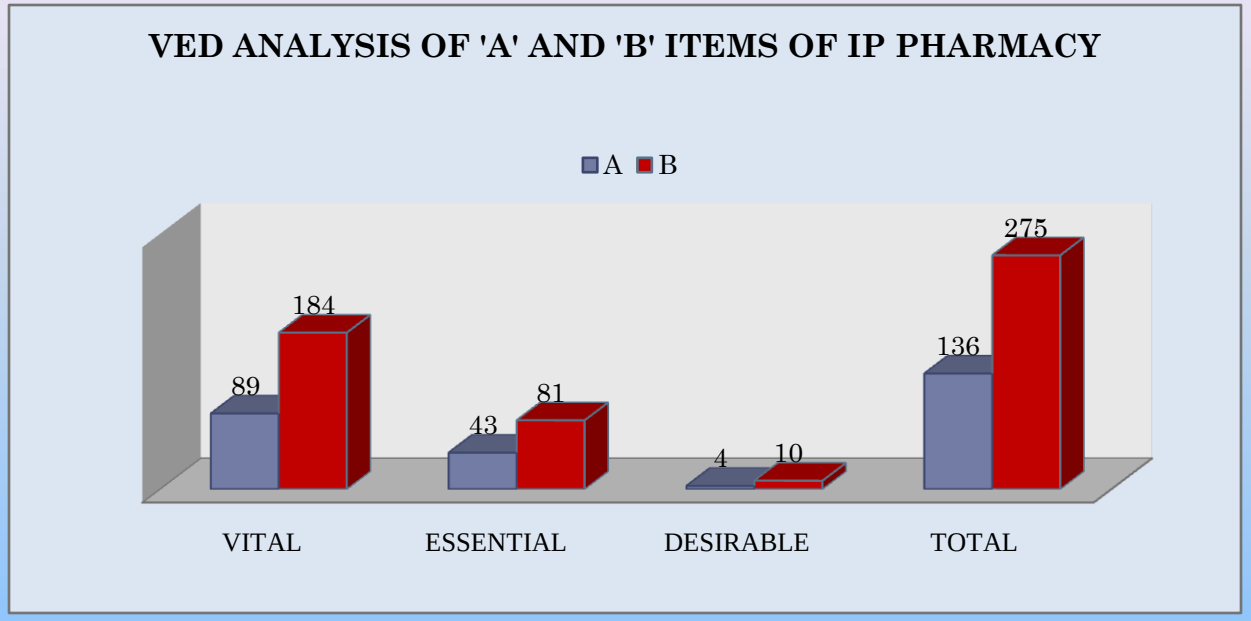
ANALYSIS OF IP PHARMACY

1) ABC Analysis of IP Pharmacy



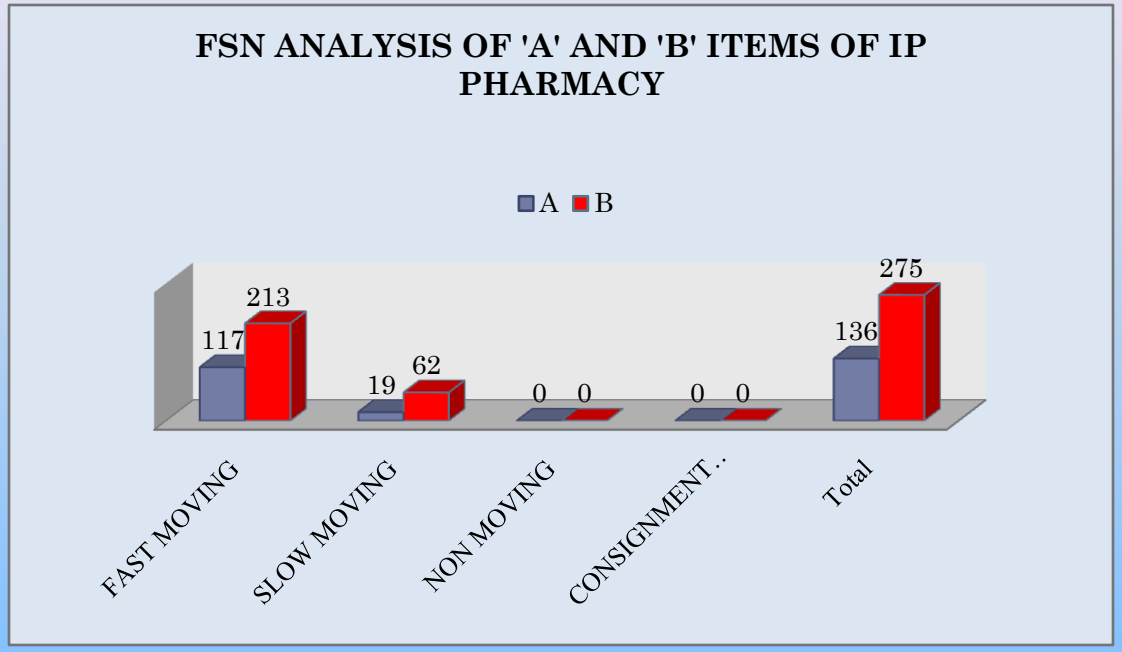
From the above figure we can find out that out of total Drugs and Consumables which were 1554, The A items are 136 in number which constitutes about 80.00% of the total value of items. The B items were 275 in number which constituted about 15.02% of the total value of items. The C items were 1143 in number which constituted around 4.98% of the total value of items

VED Analysis of IP Pharmacy



From the above fig we can find out that out of the total sample size of 411 items it was seen that there were 89 Vital items,43 Essential items and 4 Desirable Items under “A” category and there were 184 Vital Items, 81 Essential items and 10 Desirable Items under “B” Category.

FSN Analysis of IP Pharmacy



It is seen from the above fig that out of the total sample size of 411 items it was seen that there were 117 Fast moving Items , 19 Slow moving items, 0 non moving items and 0 Consignment Basis Stock under “A” category and there were 213 Fast Moving Stock, 62 Slow moving stock, 0 Non moving Stock and 0 Consignment Basis Stock under “B” Category

FINDINGS

•Consignment basis stock are only present in Cath lab hence it would cause no hindrance to the stocks as they don't carry any inventory holding cost.

•It was found out that the drugs were merely arranged as per alphabetical order and the reordering of the stocks was on random basis.

• There was no categorization of items as ABC, VED and FSN analysis

.

•Some drugs were sent back to the vendor after they expire so an account of near expiry drugs should be maintained.

RECOMMENDATIONS:

- Items which are non moving i.e which have been in the stores for more than 180 days should to be returned to the vendors before they expire.
- Only optimum stock should be maintained for rare items.
- The consignment basis stock should not be invoiced before consumption.
- Re-Order levels should be based on consumption on monthly basis
- First in First out method should be applied to prevent expiry of drugs.
- The drugs were arranged as per ABC, VED and FSN as it leads to an organised form in which inventory can be controlled.
- To sustain the initiative, it is important to supervise the system in monthly BRM meetings to keep a regular check on the stock status.

THANKYOU!