Summer Training at
Narayana Multispecialty Hospital,
Jaipur

Study on Occupational Health and Safety Practices

By
Himanshi Choudhary

Under the guidance of
Dr. Seema Mehta

MBA Hospital and Health Management
2015-2017

The IIHMR University, Jaipur
2016

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. Himanshi Choudhary** student of MBA Hospital and health Management from The IIHMR University; Jaipur has undergone internship training at **Narayana Multispecialty hospital, Jaipur** from **1st April 2016** to **31st May 2016.**

The candidate herself carried out all the studies related to her summer training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

Col (Dr) Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur

Dr. Seema Mehta
Associate Professor
IIHMR University, Jaipur

NH Narayana™
Multispeciality Hospital
Unit of Narayana Health

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DL NO.-JPR/2015/E-2172-73-74-75-76-77, DL NO.- JPR/2015/E-2166-67-68-69-70-71

NH/HRD-Off/2015/298 **Date: 2nd June 2016**

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Dr. Himanshi Choudhary** has completed her summer internship training in Quality on "Occupational Health and safety of the staff" Successfully in Narayana Multispecialty Hospital, Jaipur from 1st April 2016 to 31st May 2016.

Her work during the Period was commendable and appreciable. Her character and conduct was good.

We wish her success in her future endeavors.

For Narayana Multispecialty Hospital, Jaipur

Vishnupriya Sharma
Deputy General Manager-Human Resources

ACKNOWLEDGEMENTS: -

The internship opportunity I had with **Narayana Multispecialty Hospital, Jaipur** was a great chance for learning and professional development. Therefore, I consider myself as a very lucky individual as I was provided with an opportunity to be a part of it. I am also grateful for having a chance to meet so many wonderful people and professionals who led me though this internship period.

I express my deepest thanks to my mentor Mrs. Nabanila Dutta, Senior Manager, NH, Jaipur for taking part in useful decision and giving necessary advices and guidance and arranging all facilities to make internship easier.

I feel deeply privileged in expressing my deepest sense of gratitude to Dr.Devi Shetty (CMD Narayana Group),Mr. Arunesh Punetha(Zonal Director), Dr Mala Airun (Clinical Director),Dr Manikant Jain (Medical superintendent) and Mr. Subhasis Bhattacharya(General Manager) for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

My learning would not be all- inclusive without the help of Mr. Hemant Raj Dwivedi - Senior Executive administration and Ms. Avani Srivastava– Executive administration. Their involvement and sharing of knowledge were of great help to my study as well as in better understanding of the Quality department. I am also grateful to all the department heads and staff for giving time in spite of their hectic schedule. Without their active co operation and participations it would not have been possible to accomplish our task.

I perceive as this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to attain desired career objectives. Hope to continue cooperation with all of you in the future,

My sincere gratitude to my mentor Dr.Seema Mehta**,** for her constant encouragement

Sincerely

Dr. Himanshi Choudhary

MBA HM 20

The IIHMR University, Jaipur

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ACRONYMS/ABBREVIATIONS: -

- BMW: Biomedical waste management
- CCU: Coronary care unit
- CSSD: Central sterile supply department.
- CTVS: Cardio-thoracic vascular system
- DAMA: Discharge against medical advice
- F&B: Food and Beverages
- HIC: Hospital Infection Control
- HIS : Hospital Information System
- HDU: High deficiency ward
- ICD: International coding of diseases
- ICU: Intensive care unit.
- IPD: Inpatient department
- JCI: Joint commission international
- KTU: Kidney transplant unit
- LIS : Laboratory Information System
- MICU: Medical intensive care unit
- MLC: Medico legal cases
- MOD: Manager on duty
- MRD: Medical record department.
- MRN: Medical Record Number
- NICU: Neonatal intensive care unit
- OHS: Occupational health and safety
- OPD: Outpatient department.
- OT: Operation Theater.
- PPE: Personal protective equipment
- PICU: Pediatric intensive care unit
- SICU: Surgical intensive care unit
- SWD: Short wave diathermy
- TPA: Third party administrator
- TAT-Turnaround time

ORGANISATIONAL PROFILE

ABOUT NARAYANA HRUDAYALAYA HOSPITAL GROUP

Narayana Hrudayalaya has now radically changed the scenario of accessibility, pricing and state of the art healthcare in India. Originally, Dr Devi Shetty's radical new concept, which started with the Spartan Narayana Hrudayalaya heart hospital Bangalore in the year 2001, was now a truly global healthcare provider .Today, it has 32 Hospitals, 6600 beds, 20 Cities, 15000 Employees, 1800 Doctors and their positively outlook of being able to equip and service of 30000 beds by 2018.

Dr. Devi Shetty has over the past three decades re- affirmed his commitment to 'An equitable distribution of world class healthcare for the masses at an affordable cost'. The group's firm belief in its core values and mission statement helps reinforce our everlasting commitment to the people of Rajasthan. Narayana Hrudayalaya Jaipur will bring this very same revolutionary concept to the state and its people with the promise of an affordable one-stop health-solution.

Narayana Health (formerly known as **Narayana Hrudayalaya**) is a multi-specialty hospital chain in India, headquartered in Bengaluru.

The company won the "Good Company" award for its quality, affordability and scale. [The business model of Narayana Health became a Global Healthcare and Harvard Business School case study. The hospital chain is among the largest telemedicine networks in the world

The chain has 1500 full-time Doctors and 15,000 employees. On an average of 150 surgeries are performed every day and on an average of around 80,000 outpatients are seen every month.

NH ranked36th among 'World's 50 most Innovative Companies 'by Fast Companies2012

A leader in the field of Cardiac sciences, it performs complex congenital surgeries, Coronary bypass grafting with advanced techniques like Beating heart surgeries, Minimally Invasive Cardiac surgery and other valvular surgeries on adults and children. It is equipped with cardiac OTs, state-of-the-art Cat labs, 3D mapping of Electrophysiology, Cardiac Intensive Unit and Coronary care unit.

ABOUT NARAYANA HRUDAYALAYA HOSPITAL, JAIPUR

Narayana Multispecialty Hospital, Jaipur, a perfect blend of technological excellence, complete infrastructure, competent care and heartfelt hospitality - this is how the people, whom the hospital has been fortunate to serve, define the hospital.

It is a 290 bedded multispecialty tertiary care hospital, located at Pratap Nagar within a sprawling campus of 4.7 acres offering high quality affordable medical care to the people within Rajasthan and bordering states as well. It reaffirms the commitment to society, with no distinction in classes, religion or faith. This is a `Temple of healing 'and that sentiment echoes throughout a patient's experience at NH hospital.

The hospital is functional with a capacity of 400 beds that includes tertiary intensive care beds with additional intermediate care areas and wards. It offer centers of excellence that have a unique multidimensional approach to patient care - The Heart centre, The center for Bone, Joint and Spine, The division of Renal sciences and Transplant Urology ,The Advanced center for Minimal Access surgeries and the Maternity and Child unit to name a few.

NH Jaipur runs a very successful Renal Transplant Program and has a dialysis unit performing 1400 sessions per month. It also offers one of the most comprehensive Orthopedics services in the region including Bone & Joint Surgeries, Knee and Hip replacement s, Spine Surgery, Arthroscopy & Sports medicine. It also has the expertise and infrastructure to treat neurological conditions like Stroke, AVMs, Tumors, and Epilepsy etc. It is leading centre for minimal Access Surgeries and Bariatric Surgery to treat metabolic disorders and weight loss.

NH mission is to deliver high quality, affordable healthcare services to the broader population in India. Core values o f the group are represented by the acronym "iCare" , which encompasses Innovation and efficiency, Compassionate care, Accountability, Respect for all, and Excellence as a culture.

Ensuring quality medical treatment at Narayana Hrudayalaya Hospital Jaipur, are the most comprehensive facilities available in Rajasthan which includes a 64 slice CT scan machine, 1.5 tesla MRI, Nuclear medicine, touch screen monitors, world class dialysis facility , and a flat panel Cath lab, to name a few.

Narayana Multispecialty Hospital, Jaipur was awarded the International accreditation from **Joint Commission International (JCI) on 21st July 2012 and re-accreditation on 18th August 2015** making it the first hospital in Rajasthan to receive this prestigious recognition. A JCI accreditation provides assurance that the standards, training and processes at the hospital meet the highest international benchmarks.

1.1Vision: "To provide affordable quality healthcare to the masses worldwide."

1.2Mission: "Its dream of making quality healthcare available to the masses worldwide"

1.3Values: Core values are represented by the simple acronyms **'iCARE'**

- Innovation & efficiency

  To continuously reduce the cost of delivery of high quality of healthcare and Improve their reach.

- C- Compassionate care

  In providing accessible service that makes a difference to their patients.

- A- Accountability

  To honour commitments to their patients, employees and investors with integrity and transparency.

- R- Respect for all

  Recognize the contribution of every employee and respect the rights as well as the dignity of every patient and employees.

- E- Excellence as a culture

  Where the individually excel to collectively ensure the highest quality of and reliable services to their patients and sustainable values to all their stakeholders.

1.4QUALITY POLICY:

- Deliver world class patient care through medical excellence.
- Create a patient-centric environment:
- Ensure high standards and safety of treatment during the patient's stay
- Continuous Quality Improvement through implementation of robust clinical and non-clinical process and protocols
- Having world-class infrastructure and cutting edge technology utilized by highly skilled employees.
- Complying with statutory regulations

1.5SERVICE STANDARDS:

- Courteous
- Attentive
- Compassionate service
- Teamwork
- Safe

1.6OBSERVATIONAL LEARNING:-

Floor wise plan

Lower Ground Floor	Linen Room, Dialysis, Endoscopy, Pulmonology, Physiotherapy, Radiology, Emergency, CSSD, IT, Male Surgical and Medical Ward, Central Store, Central Pharmacy, Purchase department, Maintenance ,Fire control room, F&B Department, Food court.
Ground Floor	Registration, OPD's, IP Billing, Admissions, TPA, Non Invasive Cardiology, Ultrasonography, Laboratory and Blood bank, OP pharmacy, Cat lab, CCU,HDU,KTU, MRD
Mezzanine Floor	IP Pharmacy, Training rooms, Skill Lab, Administration, Library
First Floor	ANC, Female general ward, Pediatric ward, Biomedical Engineering, Semi Private ward, PICU, NICU, 5 OT's, ITU
Second Floor	CTVS ward, 4 OT's, MICU, SICU, Private wards, Orthopedics ward, Neurosurgery ward

1.7SPECIFIC OBJECTIVE: To describe the observational learning of different departments of the hospital.

Mode of data collection:

Every department of the hospital was observed carefully for its working, staff, hierarchy, physical set up and major challenges faced by it, if any.

Source of information: a) Primary:

- Interaction with doctors , executives and other employees
- Interaction with patients and their attendants
- Direct observation

b) Secondary:

- Registered records
- Website of the hospital
- Pamphlets, magazines , brochures etc

1.8 SCOPE OF SERVICES:

- Anaesthesia & Critical Care
- Department of Cardiac Science
  - Cardiac Anaesthesia
  - Cardiac Electrophysiology
  - Cardiothoracic & Vascular Surgery
    Paediatric & Adult
  - Interventional Cardiology
    Paediatric & Adult
  - Non Invasive Cardiology
    ECG, ECHO, HOLTER, TMT
- Department of ENT
- Department of Gastro Science
  - Gastroenterology & Haematology
  - G.I & Laparoscopic Surgery
- Department of Neuro- Sciences
  - Neurology
  - Neurosurgery
- Department of Paediatric
  - Neonatology
  - Paediatric
  - Paediatric Surgery
- Department of Plastic Surgery
- Department of Renal Sciences
  - Dialysis
  - Nephrology
  - Urology

- Transplant Services

- General & Laparoscopic Surgery
- Institute of Bone, Joint & Spine
  - Hand & Upper Limb Surgery
  - Joint Replacement
  - Spine surgery
  - Sports Medicine & Arthroscopy
- Internal Medicine
- Obstetrics & Gynaecology
- Psychiatric
- Respiratory Medicine

ALLIED SERVICES

- Dietetics
- Emergency & Trauma
- Lap Medicine

1.8DEPARTMENTAL SERVICES:

1. Outpatient Department:

There are 4 decentralised OPD:

1. North OOD
2. South OPD
3. Cardiac OPD
4. Nephrology OPD

OPD Timings: 9am to 5pm.

Average no. of OPD patients 450-500 per day (Including old and new patients

2. Inpatient Department:

WARDS	LOCATION	BED CAPACITY
Male Medical Ward	Lower ground floor	19 beds
Male Surgical Ward	Lower ground floor	16 beds
CCU HDU & KTU	Ground floor	40 beds
Female General ward	1st floor	34 beds
ANC Ward	1st floor	8+2 bed in labor room
Paediatric Ward	1st floor	6 beds
PICU	1st floor	5 beds
NICU	1st floor	5 beds
ITU	1st floor	21+2 in isolation rooms
Semi Private Ward	1st floor	34+4 day care beds
CTVS Male & Female Ward	2nd floor	6 beds and 8 bed in each ward
MICU	2nd floor	18 +2 in isolation room
Ortho General Ward	2nd floor	6 beds
Neuro General Ward	2nd floor	5 beds
Private Ward	2nd floor	18beds

3. Emergency Services:

Location: Lower ground floor

Entrance: Separate entry from the main road

The Emergency Department is a well equipped 10 bedded department. 3 beds for each triage category Red, Yellow, Green and 1 bed for isolation

Staff: 1 Emergency In charge, 3 MO, 1 Nursing In charge, 10 Staff nurse.

Emergency is divided into three zones based on triage-

Priority 1(serious)-RED	PRIORITY II(Delayed)-Yellow	Priority III(Minimal)-Green)
• Chronic self limiting disorders • Patients have life threatening injuries or conditions which are critical • Survival with immediate treatment e.g.-respiratory arrest	• Requirement of definite treatment but no immediate threat to life exists. • E.g.-acute abdominal pain, acute renal failure	• Patients having minimal injury or minor conditions and are ambulatory. • E.g.-abrasions and superficial lacerations.

Ambulance service is outsourced.

4. Operation Theatre:

There are total of 5 OTs in the 1st floor and 3 OTs in the 2nd floor

Location: 1st and 2nd Floor

Easy access to CCU, Blood Bank, Emergency and CSSD

ITU is attached to the OTs located in the 1st floor

Manpower: Head of the Department, 14 Anaesthetist, 1 OT Manager, 2 OT In charge , 2 Perfusionists,18 OT Technicians,48 Staff Nurse, 5 House Keeping Staff.

No of Surgeries: 300-350 surgeries per month.

5. Catheterisation Lab:

Location: Ground Floor

All Invasive cardiac Procedures are done in cath- lab such as Angiography, Angioplasty, Cath Study, and Electro Physiological Study.

Door to Balloon Time for emergency patients is 90 minutes.

Average patients – 10-12/day

Temperature: 17-20 degree Celsius.

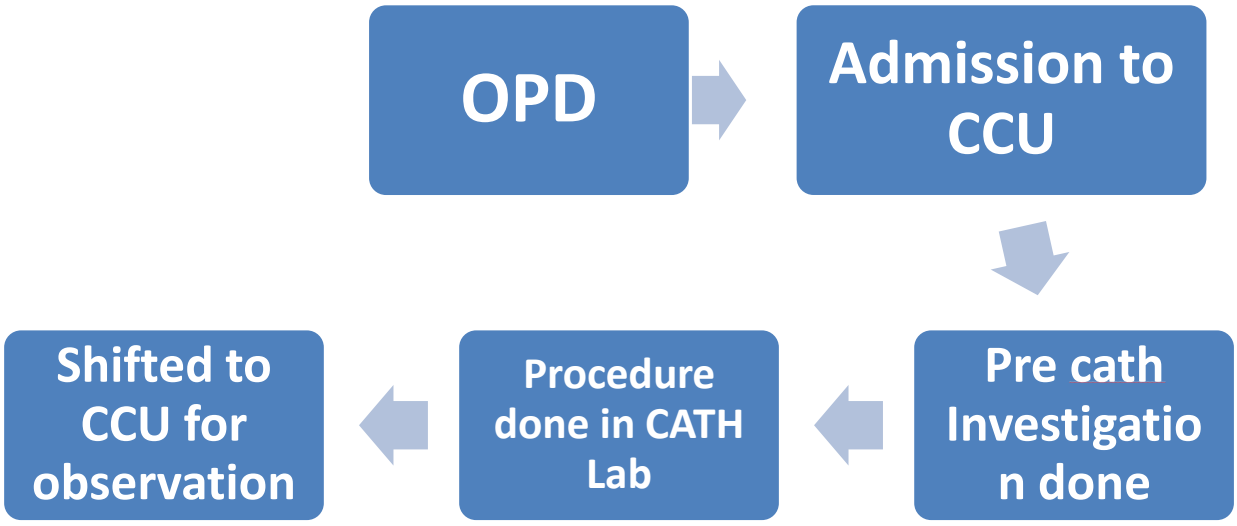
TAT: In between 2 cases: 45-50 minutes.

Angiography: 10-15 minutes.

Angioplasty: variable

Maintenance is done regularly every 3 months.

Process Flow of cath lab:



6. CSSD

Location: Lower Ground Floor

Total Area is divided into 4 Zones:

- Zone I. (Dirty Utility) Reception , Inspection and Documentation
- Zone II. (Clean Area) Assembly and Packing
- Zone III (Sterile Area) Sterilisation
- Zone IV (Issue Area) Storage and distribution

Check for proper sterilisation-

- Bowie dick test
- Leak test
- Sterilisation test
- Batch monitoring test

Functions-

- Cleaning

- Processing
- Sterilization of all instruments, kidney trays etc.
- It helps in infection control process.
- It is responsible for optimum utilization of equipment resources of the hospital.

7. Radiology Department:

Location: Lower Ground Floor

Area:

- Reception Area
- Console Room
- Imaging service room
- Changing room-2

Different rooms for X-Ray, Mammography, MRI-1.5 Tesla, CT Scan 64 Slice, potable x-ray machine

Sonography:

Location: Ground floor

Area:

- Reception Area
- Procedure room: 2
- Reporting room

8. Laboratory:

Location: Ground floor

All laboratory services related to Biochemistry, Microbiology, Histopathology and Haematology.

Blood Bank is attached with the laboratory.

9. Physiotherapy and Rehabilitation Centre:

Location: Lower ground floor

Well trained team of 6 physiotherapists managing the department and providing rehabilitation therapy for joint disease, stokes, trauma etc.

Other facilities:

- Wax Therapy

- Hydro collator- hot pack
- Interferential Therapy
- IFT- Pain Relief
- Ultrasound therapy- piezoelectric effect
- TENZ
- Muscle Stimulator
- SWD etc

10. Medical Record Department:

Scope of Services:

- Maintenance of all medical record
- Storage of records : 1) OPD: 3 years
  2) IPD: 5 years
  3) Death/MLCs: lifetime
- Maintaining the integrity and confidentiality of all medical record
- Maintenance of MLC cases
- Numbering and filing of patient record.
- Completion of all incomplete records.

11. Food and Beverages:

Location: Lower ground floor

The F&B department is outsourced and the quality of food is regularly monitored by the F&B executives and the dietician.

Scope of services:

- To provide well balance nutritious food to all in patients as well as patients for dialysis as per their needs.
- To serve staff and patients attendants
- To helps in improving the patient's condition by providing hygienic, proper and nutritious food as prescribed by the dieticians.

Provide 5 servings for the general ward patients and 8 servings to the semi private and private ward patients.

Types of diet:

- Normal full diet
- Liquid diet

- Soft diet
- Diet for diabetic patients
- Diet for renal patients
- Diet post cardiac surgery patients.

12. Housekeeping:

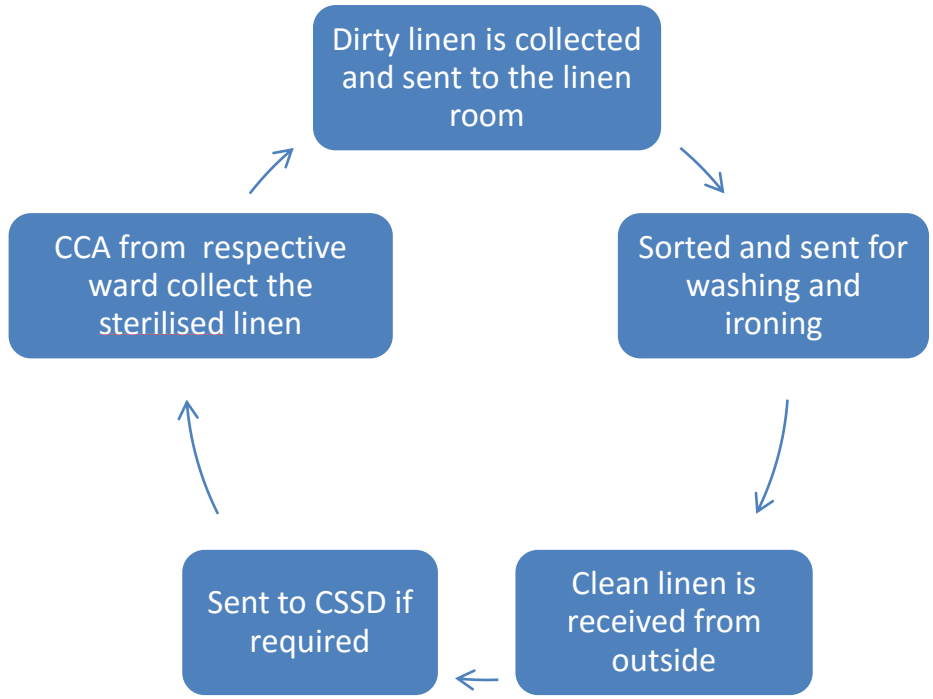
Housekeeping department is outsourced

Services provide:

- Maintain hygiene of the patients and the hospital
- Helping in patients preparation
- Infection control
- Waste disposal

13. Line and Laundry:

Linen and laundry department is outsourced. The process flow of linen department-



Availability of coloured coded bags in each department. Orange colour is for serology positive patients and green bags for serology negative patients.

14. Pharmacy:

The hospital 3 different types of pharmacy:

- OPD Pharmacy
- IPD Pharmacy
- OT Pharmacy

Functions:

- Dispense of drugs to all the admitted patients.
- Dispense of drugs for the OPD patients.
- Demand estimation according to the formulary, in the absence of formulary, establishment of specification for drug procurement.
- Furnishing of new drug information to consultants and other professional staff.
- Quality control of drugs purchased

Main Store-

- Location- lower ground floor
- Store receives all medicines, medical equipments, instruments, consumables and other essential goods, printing and stationary material of hospital as ordered, and issues' as per the requirements to the departments.

15. Diagnostic Services:

Location: Ground Floor

Scope of services:

- Ultrasonography
- TMT
- Electrocardiography
- Echocardiography
- Electroencephalography
- Uroflowmetry
- Electromyography
- Pulmonary function test

Operational timings: 9 am to 6 pm.

16. Dialysis Department:

Location: Lower ground floor

Bed Capacity: 30 beds including 4 beds for serology positive patients

No of procedures done per day: 45-50 dialyses per day

Shift of dialysis: 7 am to 12 noon, 12 noon to 5 pm and 5pm to 8 pm.

Every patient is provided with a meal, included in tariff and the meal is prescribed by the dietician.

17. Mortuary:

Location: Lower ground floor

Temperature: 5-6 degree Celsius

Capacity: At a time four dead bodies can be kept together

Function:

- To keep the dead bodies in the hospital until the relatives claim them.
- To keep the dead bodies for post mortem (MLC Cases).

18. Security Services:

Security service department of the hospital is outsourced.

Functions:

- To provide security services to all the staff, patients, relatives and visitors
- To protect the hospital property within the premises
- To analyse threats and vulnerability in conjugation with the managements , police and others
- To control the movement of vehicular traffic inside the premises.

19. Billing and Finance Department:

Location: Ground floor

Operational timings: 9am to 5 pm for the finance department

24 hr IP bill service.

Functions:

- To provide salary to all the staff in a timely manner
- To provide payment to all the vendors and contractors
- Tracking the expenses of in patients on daily basis
- Timely discharge of patients related to financial clearance

- To provide accurate and timely financial information for decision making.

20. Maintenance Department:

Location: Lower ground floor

Functions:

- To maintain continuous electric supply to the hospital.
- To maintain the chilling plant room of the hospital
- To maintain the supply of medical gases
- To maintain the proper functioning of STP

Operational timings: 24hr.

Infrastructure:

- Low tension room
- Generator panel: 2 generator of 750 ampere each
- Diesel tank- 24 kilolitres capacity
- Sewerage treatment plan
- Desk panel- control air handling unit
- Chilling plant room
- Gas manifold room

21. Human Resource Department:

Location: Mezzanine floor

Functions:

- Recruitment based on requisition form from respective department duly signed by In charge of the department, HR and facility director
- Induction and training programs- 3 days induction program for all new employees
- Performance appraisal ones in a year in the month of March
- Employee engagement activities such as birthday celebration, open house, and also on the job trainings such as fire safety. BLS training
- Grievance Handling
- Conduct employee exist interview

22. Fire safety Department:

Location: Lower ground floor

The hospital has 7 fires exist door in each floor. A total 26 functional fire exist doors

Sprinklers are located in the entire hospital with a distance of 6 mts between two sprinklers and burst at 68 degree Celsius

Smokes detectors are also located in the entire hospital.

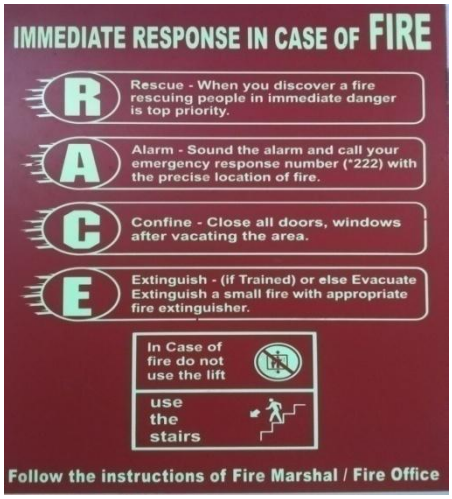
Fire Safety Equipments:

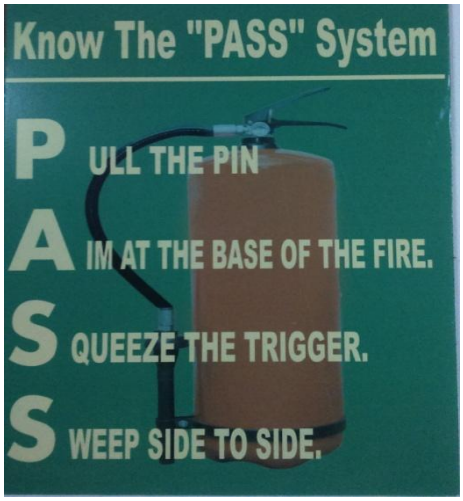
- Horse Reel Drums 21
- Jockey Pump 01
- Alarm Valve 05
- Double Hydrant Valve 28

Hospital follows “PASS” and “RACE” protocols.

PASS: Pull Aim Squeeze Sweep for operating a fire extinguisher

RACE: Rescue Alarm Confine Extinguish, Evacuate.





Narayana Health
Health for all. All for health.

2. PROJECT REPORT

Occupational Health and Safety: A Study on Narayana Hospital Staff

Project Guide-

Mrs.Nabanila Dutta (Senior manager)

Mr.Hemant Raj dwivedi (Senior Executive)

QUALITY DEPARTMENT

2.1BACKGROUND-

Occupational health and safety (OHS) is one of the prime most concerns in hospital industry wherein the employees are exposed to number of occupational hazards. Occupational health and safety (OHS) covers staff health, safety and welfare in the workplace.

According to the study done on Healthcare Industry it was found that all industries in this sector do not have an OHS management system. Only some of the healthcare industries are able to implement and manage the OHS management system effectively and efficiently. Since healthcare industry deals with health of the public, the level of OHS should be well maintained in order to increase the performance and efficiency of the industries. Most of the hazardous activities are handled by nurses and medical attendants who are unaware of the hazards and are untrained.

OHS is particularly important in hospitals because major hazards exist—such as exposure to infectious and chemical agents, manual handling of patients and materials, slips, trips, falls, and occupational violence. These hazards can lead to musculoskeletal injuries, acute traumatic injury, infections such as hepatitis and potentially even death.

HCWs need protection from these hazards because their job is to care for the sick and injured patients. Their patients come first. They are often expected to sacrifice their own wellbeing for the sake of their patients. But it should be noted that good health of HCWs has the added benefit to contributing to quality patient care and health system strengthening. Protecting the occupational health of health workers is critical to having an adequate workforce of trained and healthy health personnel.

According to recent study that the organizations have started emphasizing on safety performances as healthy mind resides on healthy body.
A health care facility is a workplace as well as a place for receiving and giving care. HCW who are exposed to a complex variety of health and safety hazards everyday including:

- Biological hazards, such as TB, Hepatitis, HIV/AIDS, SARS
- chemical hazards, such as, glutaraldehyde , ethylene oxide
- physical hazards, such as noise, radiation, slips trips and falls

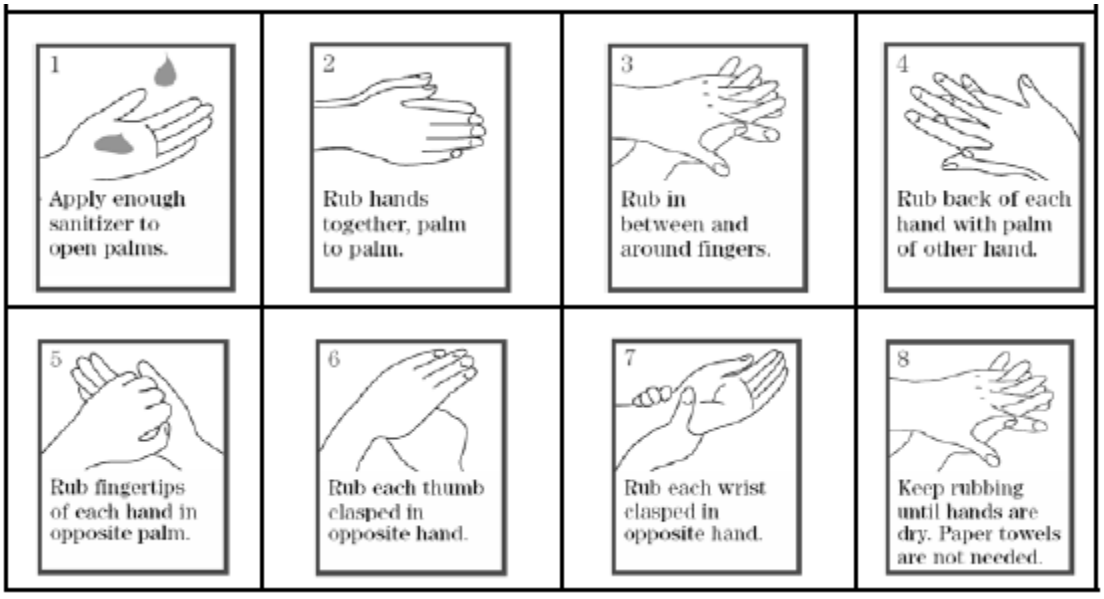
- ergonomic hazards, such as heavy lifting
- psychosocial hazards, such as shift work, violence and stress
- Fire and explosion hazards, such as using oxygen, alcohol sanitizing gels; And Electrical hazards, such as frayed electrical cords.

The impact of poor OHS is felt not just by affected staff, but also by the patients they are treating therefore various precautions should be taken at work place such as-

- Hand hygiene
- Use of personal protective equipment(PPE)
- Prevention from needle stick/sharp injuries
- Prevention from spill management
- Proper BMW management
- Prevention from weight lifting
- Hand Hygiene-

The practice of hand hygiene can minimize the risk of acquired infection during the during hours of the HCW when they are in contact in with patient , with blood , body fluids , known and unknown contaminated surfaces of the equipment. The hand hygiene breaks the chain of transmission of infection from person to person. All health professional must practice the hand hygiene with proper steps.

Steps of Hand Washing-



- Personal Protective Equipment(PPE)-

  PPE provide physical barrier between the micro-organisms' and the wearer. It offer protection of-

  - From contamination of hands ,eyes, clothing, hair, and shoes
  - Being transmitted from to other patients and staff. It includes-
    - Gloves
    - Protective eye wear(goggles)
    - Mask
    - Apron
    - Gown
    - Boot/shoe cover
    - cap



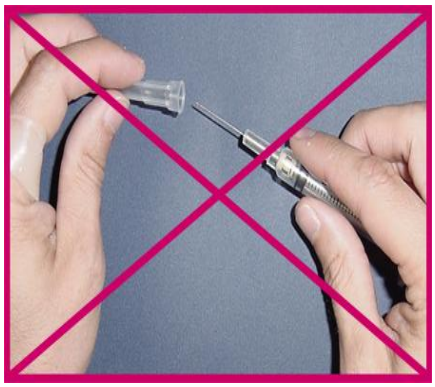

- Needle Stick Injury(NSI)-

  Knowledge of the HCW about the risk associated with the needle stick injuries and its prevention should be adequate.

  It is found that in the HCW had met with NSI and most of them has insufficient knowledge if prevention from NSI.

  Prevention of NSI/sharp injury-

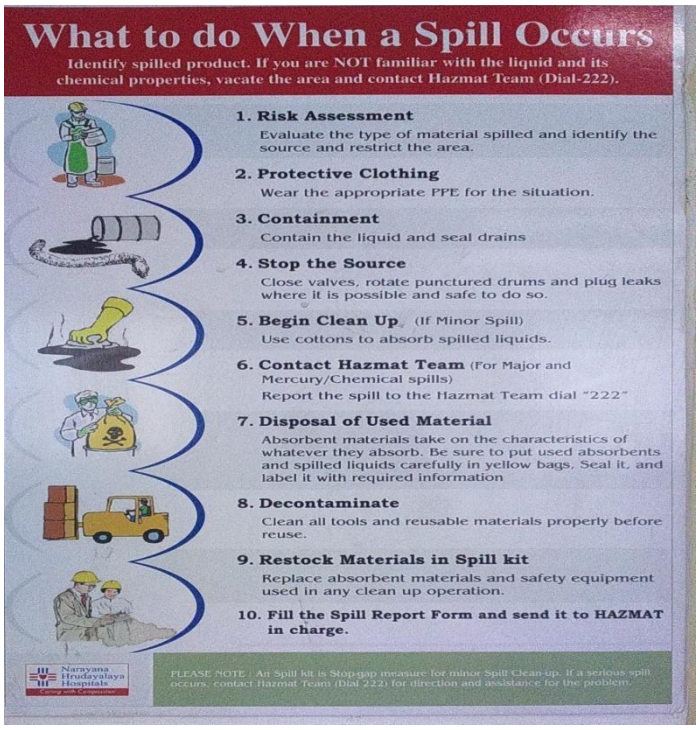
  - Place needle, scalpel blades and other sharp items in puncture proof container with a lid.
  - NEVER recap a used needle by hand.
  - NEVER leave sharps or needle exposed or unsecured.
  - NEVER practice hand to hand transfer of sharp, place in neutral to avoid injury.



- Spill Management-

The spill can be biological (blood, body fluid) and chemical substance. All the HCW should be equipped with how to deal with different kind of spill and their procedure. For this there should be availability of the PPE required along with its training in use.

In the hospital for the spill management there is proper procedure and protocol is followed long with a hazmat is provided to staff. If in case of large spill (above 30 ml as per hospital norms) a code is announced for HAZMAT TEAM, which comes and cleans that particular area



Other Safety Measures –

In the hospital, other than those directly related with patient other safety measures also important for HCW such as prevention from-

- Slips

- Ergonomics that is improper weight lifting leads to occupational health problem for the staff.

- Electrical and Fire safety-the staff should be well aware of the emergency protocol followed in the hospital. The steps that should be followed-

2.2LITERATURE REVIEW-

Occupational health and safety (OHS) covers employee health, safety and welfare in the workplace. A fundamental principle in the Occupational Health and Safety Act 2004 (the OHS Act) is that an employer such as the board of a hospital, 'must so far as is reasonably practicable, provide and maintain a working environment that is safe and without risk to health'. It is also the responsibility of the employee to take care of his or her safety and health as well as of others. Major hazards exist in hospitals—exposures to infectious and chemical agents; slips, trips, and falls; occupational violence; lifting and repetitive tasks and risks associated with poor design of the workspace. These can lead to infections such as hepatitis, musculoskeletal injuries, stress and serious injury such as fractures from exposure to occupational violence, acute traumatic injury and even death. [1]

According to joint ILO/WHO committee revised definition 1995: Occupational health should aim at: the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations ; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities ;and ,to summarize :the adaptation of work to man and of each man to his job.[2]

OHS in hospitals can be improved by providing information, training and creating awareness. A safety and health management system helps in developing a safety culture in hospitals, which benefits both worker and patient safety. The scope and duties of authorities which are directly related to patient safety have to be clearly defined. All hospital workers are to taught and trained in safety measures. The employer has the responsibility to provide a health and safety workplace in hospitals as per the rules and regulations. By implementing appropriate fire protection systems and suitable fire safety management measures the level of fire safety can be increased. It is important that characteristics of preventable adverse events are to be known by the healthcare professionals, managers and researchers. The supervisors are to be trained to equip them with skills to identify, analyze and eliminate different occupational hazards in hospitals.

As the hospital boards are responsible for the quality of care, it is essential for the boards to know how to achieve it. [3]

Safety management refers to visible practices and measures practiced by organizations to give feeling of security to employees, gives the perception that organization cares for the employees and thus contributes partially to their satisfaction level .Certain prerequisites are needed to ensure safety management in an organization chief among them are: management commitment to safety, safety communication, health and safety objectives, training needs, rewarding performance and worker involvement. Safety culture, climate and safety management are considered the key indicators of ensuring best safety practices in an organization which could be broadly termed as "attitude, beliefs and perceptions shared by the dominant group among the employees which in turn directs their reaction towards risk and risk control systems [4]Supervisors role is important in ensuring safety of the workplace and employees conform to safety rules and procedures when they perceived that the action of their supervisor was fair .Safety training and policies are also essential determinants to enhance their performance. Thus effective training assists workers to have a sense of belongingness and is more accountable. [5]

Based on the previous researches, the study proposes a framework in which include six core elements:

- Management leadership
- Employee participation
- Hazard identification and assessment
- Hazard prevention and control
- Education and training
- Program evaluation and improvement

A safety and health management system should be proactive, collaborative process to find and fix workplace hazards before employees are injured or become ill. [6]

The main causes of ineffectiveness of OHS management system are the lack of awareness on the employees, lack of communication between the worker and the management and the lack of management commitment. Many of the health care industries are giving least importance on OHS management.

The hospital working environment is complex and demanding and can pose significant risks to staff safety. The impact of poor OHS is felt not only by affected staff but also by the patients they are treating. Therefore it is important to examine whether hospitals in are effectively managing OHS risk.

Very few studies had been carried out in India in the context of OHS .The purpose of the present study to understand various OHS practices followed in the hospital and to evaluating the its effectiveness by assessing the training need of the employees.

2.3AIM OF THE STUDY-

- To study the employees awareness and practices regarding health and safety at workplace.
- To identity the training requirement of the Health Care Workers (HCW) in the area of occupational health and safety.

2.4 METHODOLOGY-

- Study design-A **descriptive cross –sectional study** was conducted using structured questionnaire and observation on various practices related to employee work and their safety in the hospital.
- Study area- Narayana Multispecialty hospital, Jaipur.
- Study population-All Narayana employees excluding doctors and night duty staff.
- Nature of study-A combination of qualitative and quantitative data collected through the structured questionnaire.
- Study tool-Occupational health and safety checklist and a structured questionnaire.
- Study period- The study was undertaken in between the month of April 2016 and May 2016.
- Sample size-Total 205 health care workers in which nursing staff, housekeeping and other staff (which includes maintenance department, food and beverages, laboratory staff ,CCU staff)
    - Nursing staff - 129
    - Housekeeping staff - 50
    - Other staff - 26

- Sampling Technique- Non probability convenience sampling technique had been used.

Selection of the Study Population-

Inclusion Criteria- Currently working individual who can participate and are available at the point of interview.

Exclusion Criteria- Currently working individual does not include doctors, consultants and night duty staff.

2.5DATA COLLECTION -

The data was collected using structured questionnaire.

- The questionnaire was prepared to assess the knowledge and the use of preventive measures of infection control in the hospital.
- The questionnaire also aim to assess the status of health of the employee
- To assess about the training requirement on OHS of the hospital staff.

The questionnaire is same for each category under study. The respondents were given the brief about the aim of the study.

The subjects under study were observed for the compliance of infection control practices like hand washing technique, BMW management, their working condition and their health status and also the various continuous training programs being provided by the management.

2.6ANALYSIS AND INTERPRETATION OF DATA

The data analysis was done using MS Excel and the interpretation of results done by using following charts-

A. EMPLOYEES FAMILIARITY ABOUT THE FOLLOWING SITUATIONS-

1. Awareness Of The Hospital Employees In different Emergency Situations-

(1.1)Fire-

It was found that the staff has good knowledge about the emergency situation like fire as the hospital provide regular training on this particular aspect.

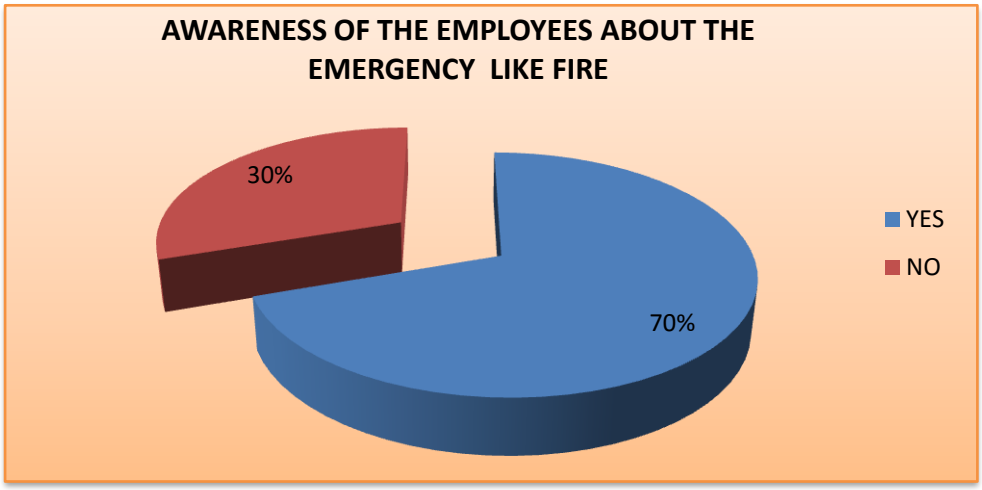


Fig1.1 (a)-knowledge about fire safety among hospital staff

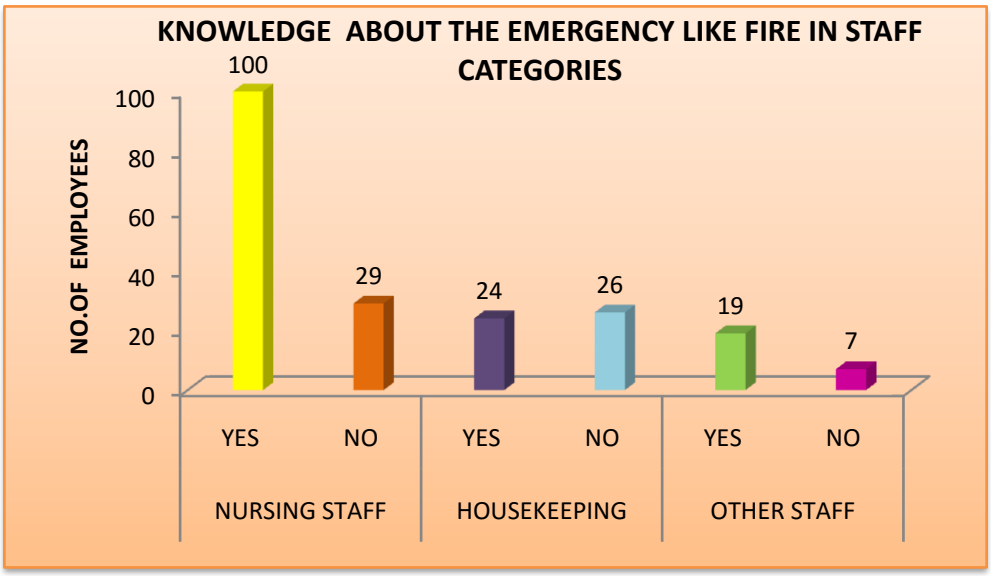


Fig1.1 (b) - knowledge about the fire safety among various categories of the staff.

Inferences-70%of the staff is aware of the emergency protocol used in case of fire while 30% of them have poor knowledge of it.

It was found that among hospital staff, housekeeping staff has least knowledge among all (48%) as compared to other staff (73%) and the housekeeping staff (78%).

(1.2) Knowledge about the various emergency codes -

The employees were asked about the various kind of codes used in the hospital if there is any kind of emergency as there is unique system adopted by the hospital management to handle emergency situations and to avoid problems in daily working of the hospital.

The data was collected to know about the knowledge and awareness of these codes which was found to be major area of concern.

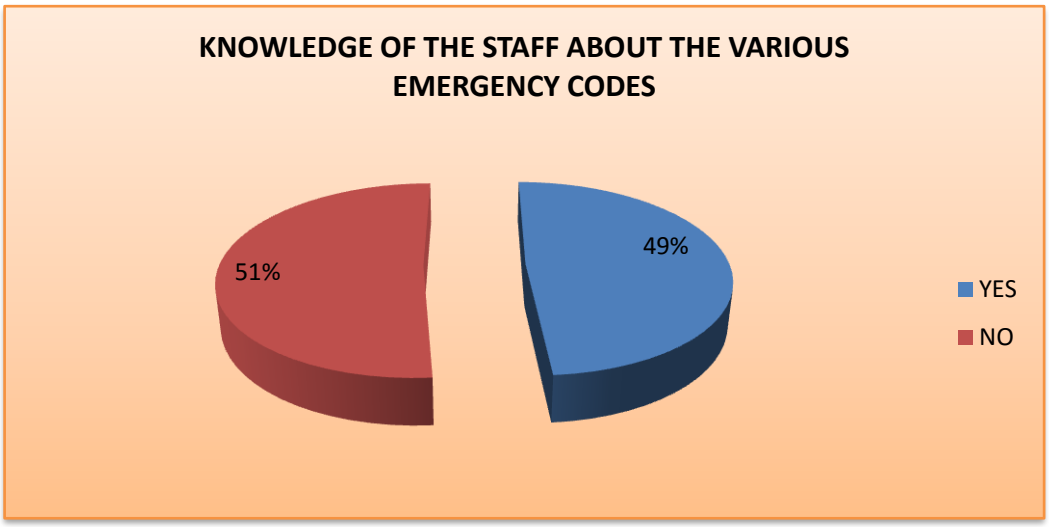


Fig1.2 (a) -knowledge about emergency codes among hospital staff

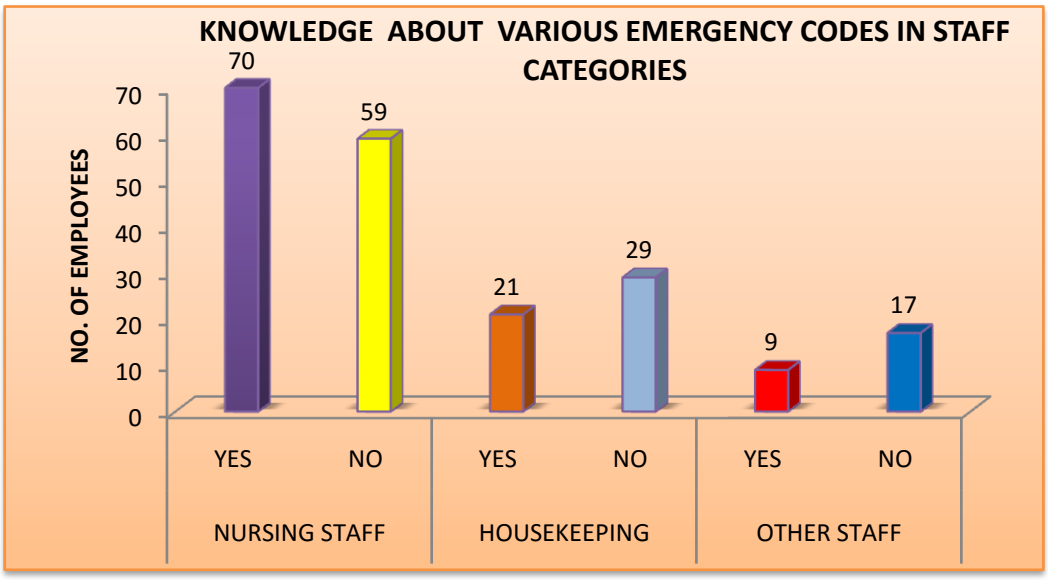


Fig1.2 (b) - knowledge about the emergency codes among various categories of the staff.

Inferences- Only **49%** of the employee had good knowledge but **51%**of the employee has poor knowledge of the codes used in case of emergency in hospital.

On further drill down, it was found that among the hospital staff the other staffs has least aware (35%), as compared to housekeeping (42%) and the nursing staff (54%).

(1.3) <u>Knowledge about the chemical spillage in the hospital-</u>

The data was collected about the knowledge and awareness among the hospital employee regarding the chemical spillage and its cleaning protocol used in hospital.

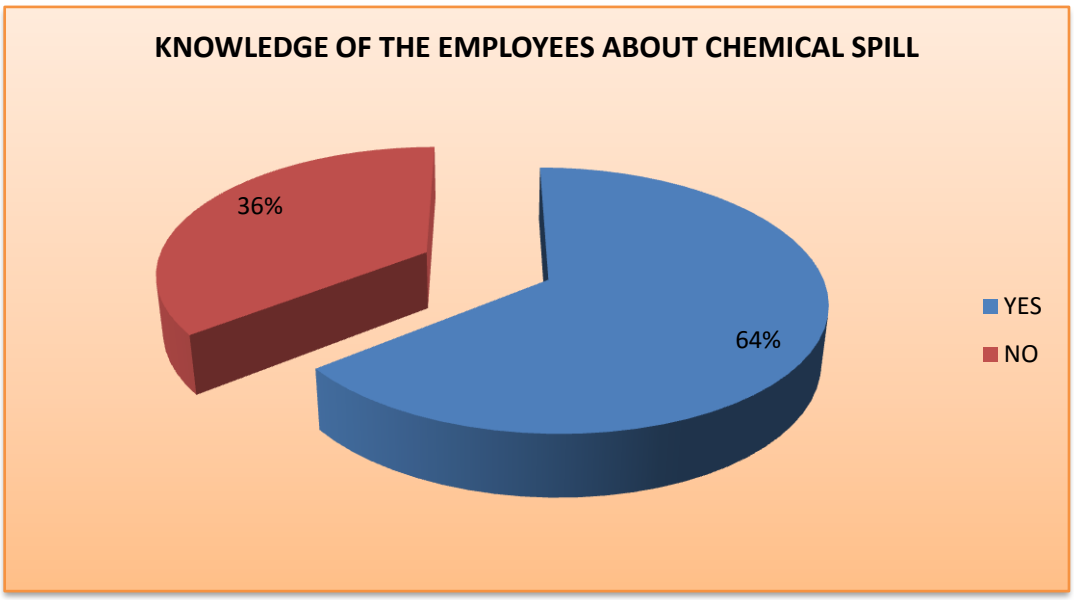


Fig1.3 (a) - knowledge about chemical spillage among hospital staff

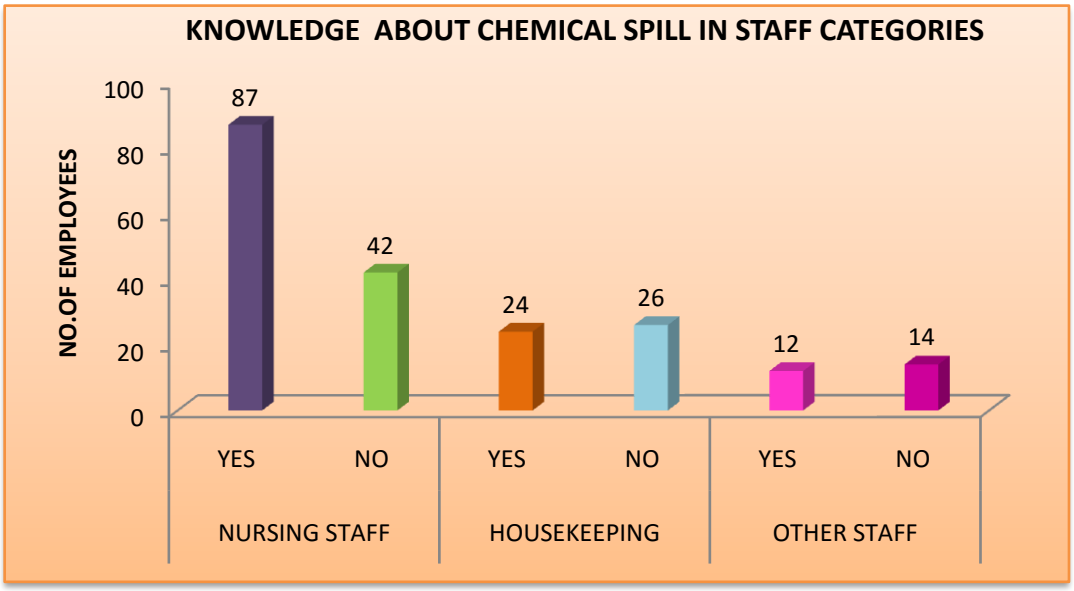


Fig1.3 (b) - knowledge about the chemical spillage among various categories of the staff.

<u>Inferences-</u>64% of the employee has good knowledge while **36%** of the employee had poor knowledge of handling chemical spillage in the hospital.

(1.4) Awareness of the hospital staff about the chemical exposure and its procedure of prevention-

The data was collected to know about the knowledge and the awareness of the staff about the various procedures if they were exposed to any kind of chemical in their workplace.

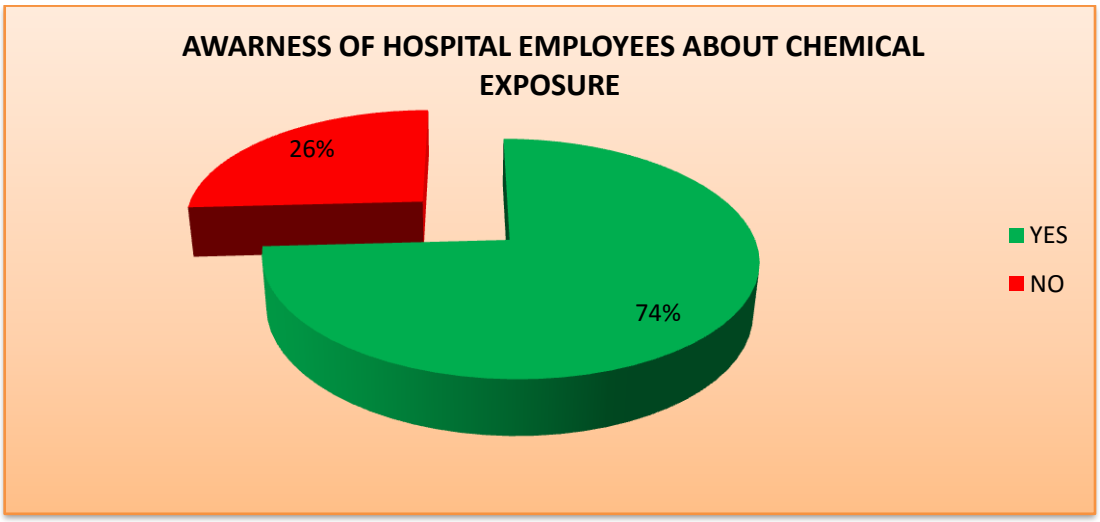


Fig1.4 (a) - knowledge about chemical exposure among hospital staff

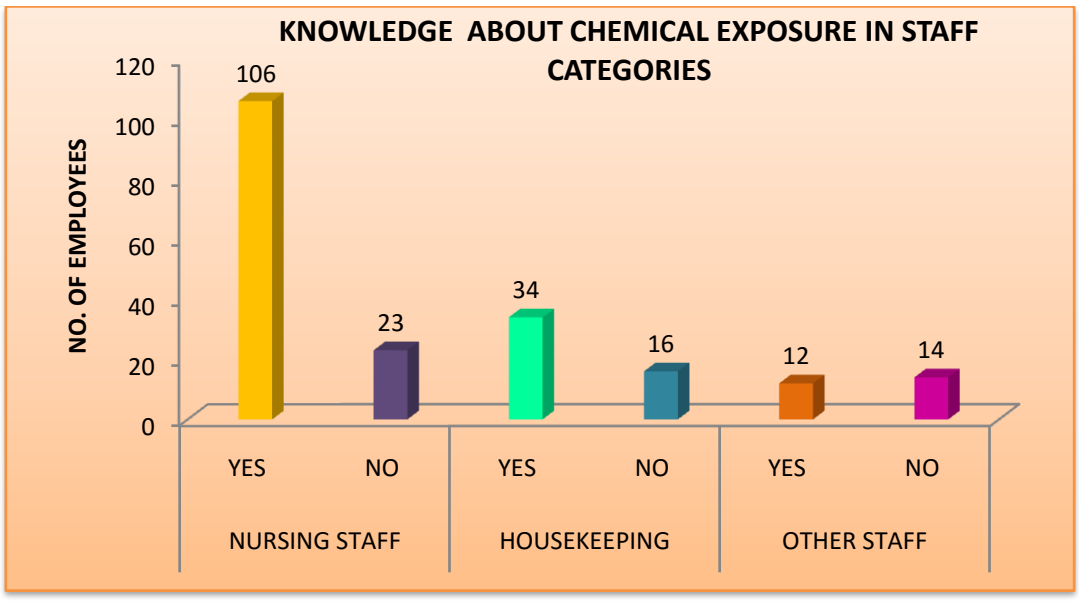


Fig1.4 (b) - knowledge about the chemical exposure among various categories of the staff.

Inferences-74% of the employee had good knowledge while 26**%** had poor knowledge of chemical exposure.

(1.5) Awareness about electric shock among hospital employees –

The data had been collected regarding knowledge of the employee from the electric shock conditions.

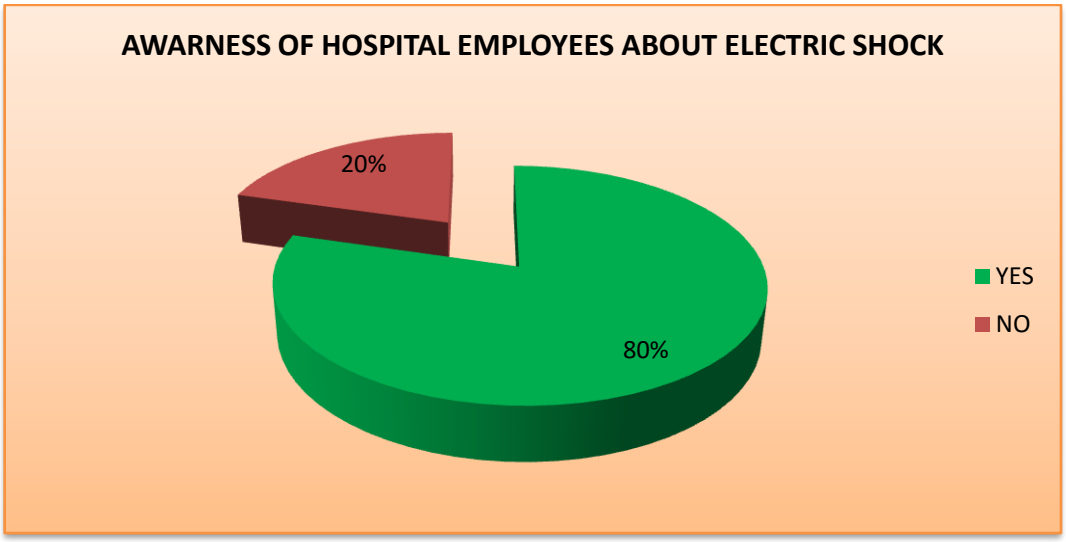


Fig1.5 (a) -Awareness about electric shock among hospital staff

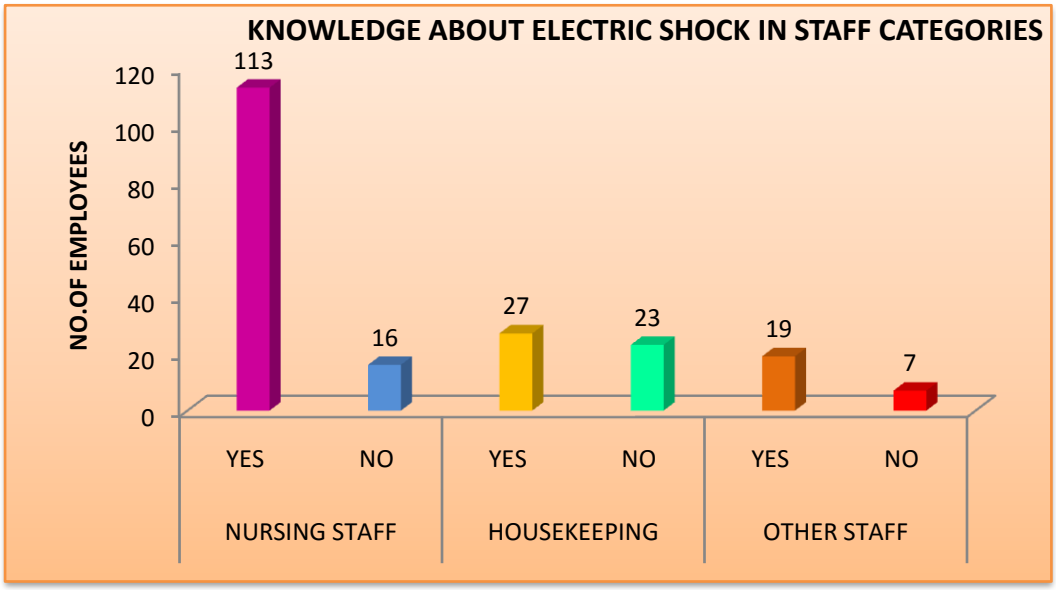


Fig1.5 (b)-Awareness about the electric shock among various categories of the staff

Inferences- **80%**of the employee has good knowledge while **20%** of the employee has poor knowledge of what to do in case if there is electric shock condition.

2. KNOWLEDGE AND AWARNESS ABOUT THE VARIOUS INFECTION CONTROL PROCEDURES AMONG THE STAFF –

(2.1)Knowledge and prevention of the hospital employees from needle stick injury-

The data was collected regarding the various infection control practices in the hospital and one of the important in that is the needle stick injuries. The staff had been asked about the proper disposal procedure, the equipment used for it and as such.

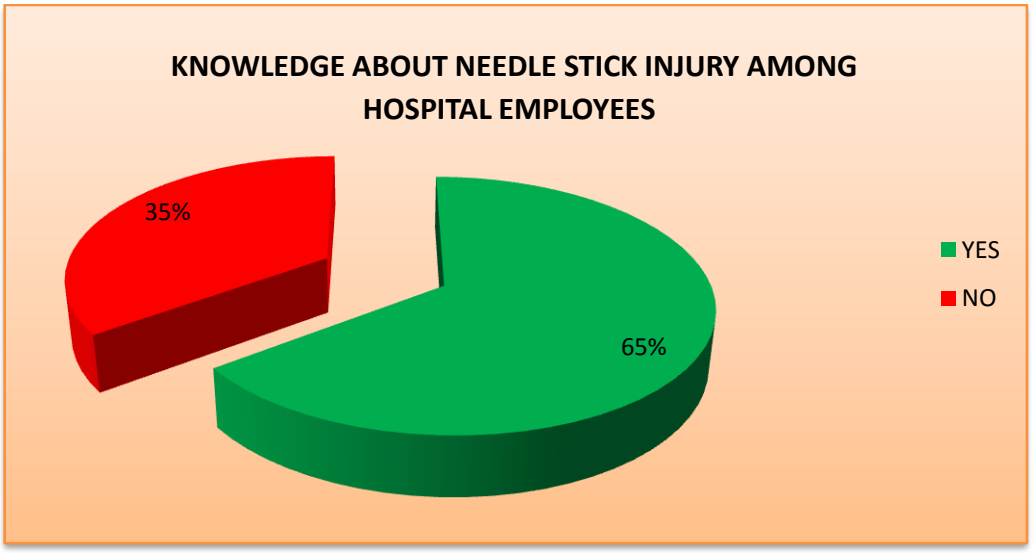


Fig2.1 (a)-knowledge about needle stick injury among hospital staff

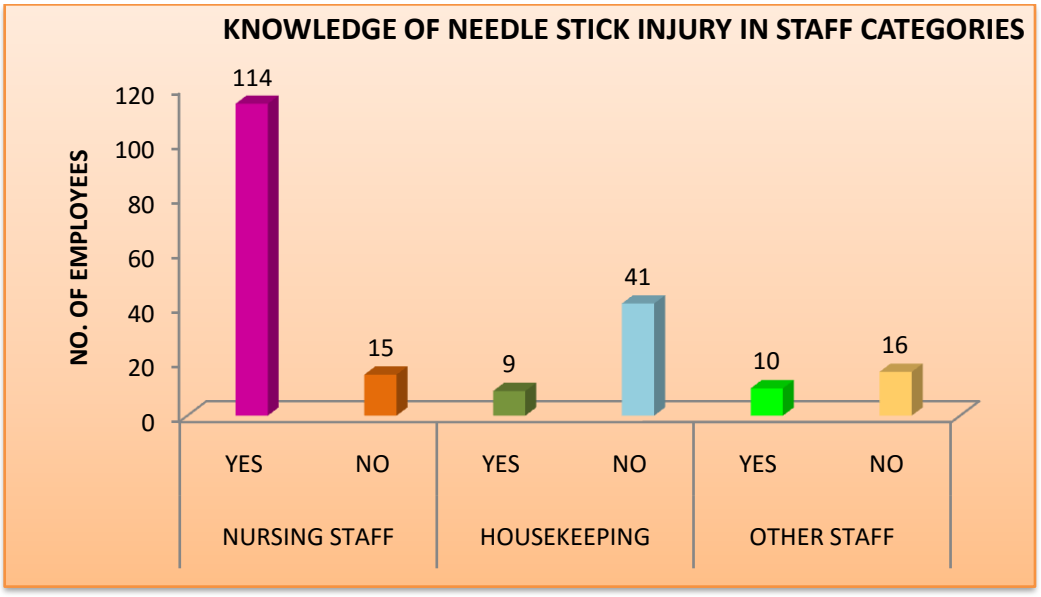


Fig2.1 (b)-knowledge about the needle stick injuries among various categories of the staff

Inferences-**65%** of the employee had good knowledge while **35%** had poor knowledge about prevention from NSI.

(2.2) Knowledge of the hospital staff about the Basic hand washing Technique-

The data was collected about the knowledge and awareness about the basic hand hygiene among the hospital staff.

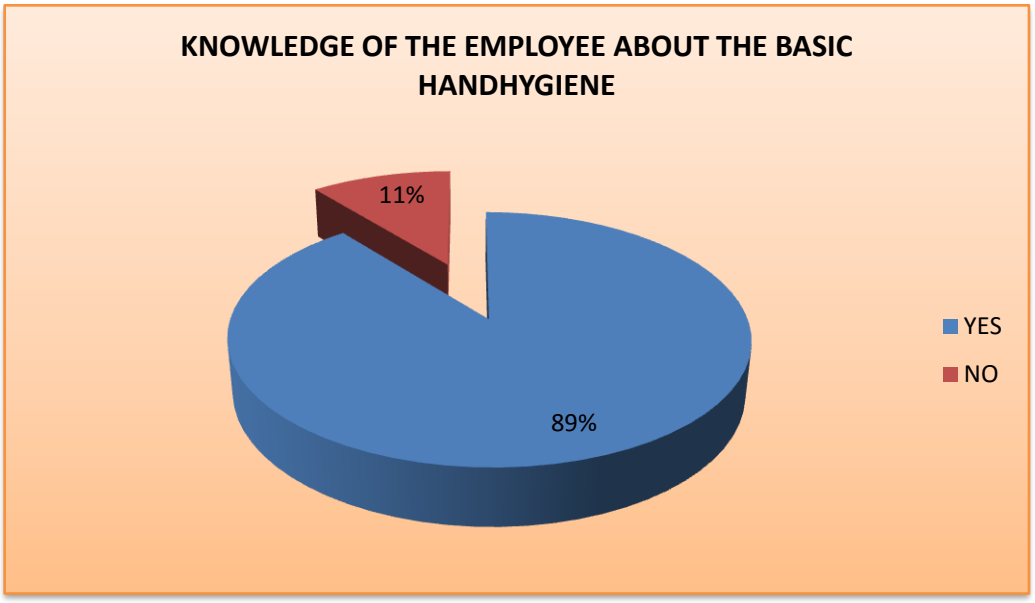


Fig2.2 (a) -knowledge about Basic Hand washing among hospital staff

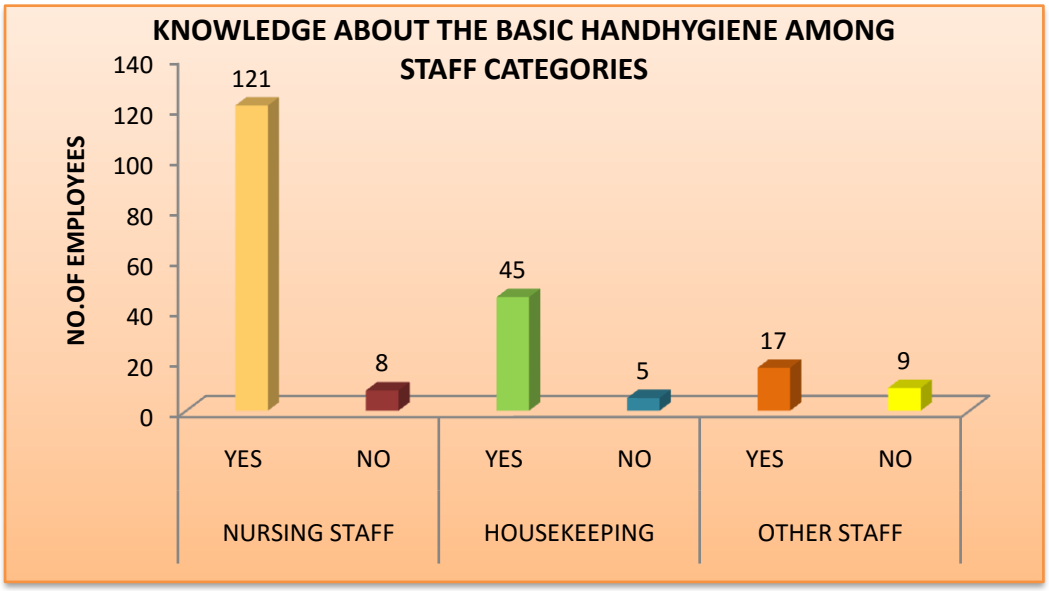


Fig2.2 (b)-knowledge about the Basic Hand washing among various categories of the staff

Inferences-89%of the employee has good knowledge while **11%** has poor knowledge about the basic washing technique

(2.3) Knowledge of the staff about the Biomedical Waste Management (BMW) and its procedure used in the hospital-

The hospital has sound biomedical waste system and each employee has given training related to the disposal of the waste on regular intervals provided with color coding bags used for waste disposal.

The data was collected related to awareness and knowledge of the staff about the color coding of these BMW bags, when these should be emptied and so on.

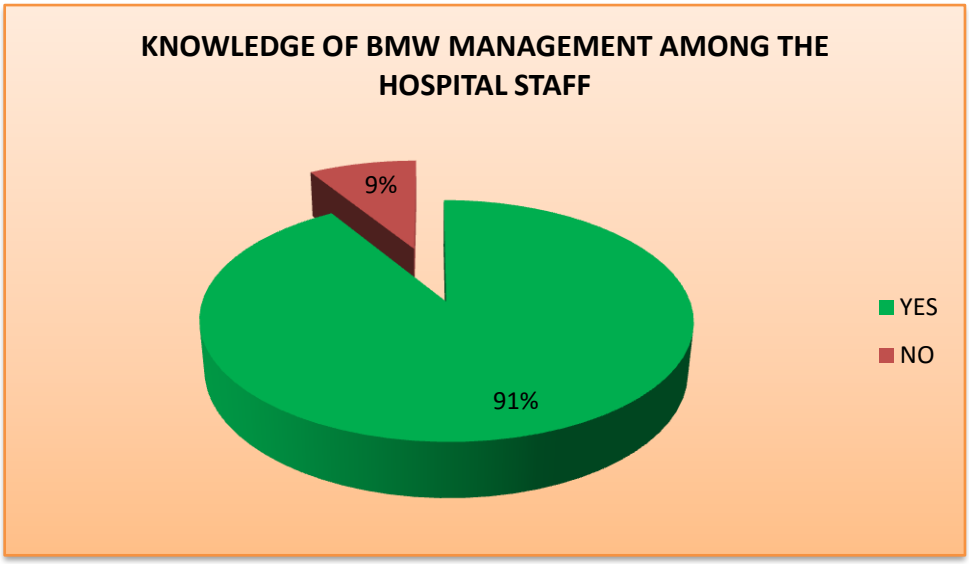


Fig2.3 (a) - knowledge about BMW management among hospital staff

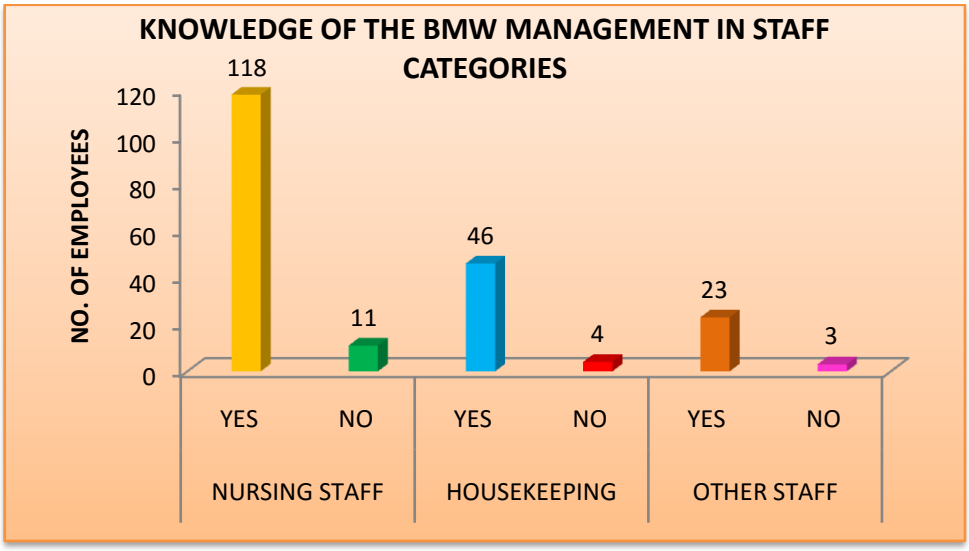


Fig2.3 (b)-knowledge about the BMW management among categories of the staff

Inferences-91% of the employees has good knowledge while **9%** has poor knowledge about the color coding of the BMW bags

(2.4)Knowledge of the employee about the sharp container and its disposal-

The data was collected regarding disposal of sharps, about the knowledge of sharp container among staff and its use, the solution which is commonly used in while disposing of sharps.

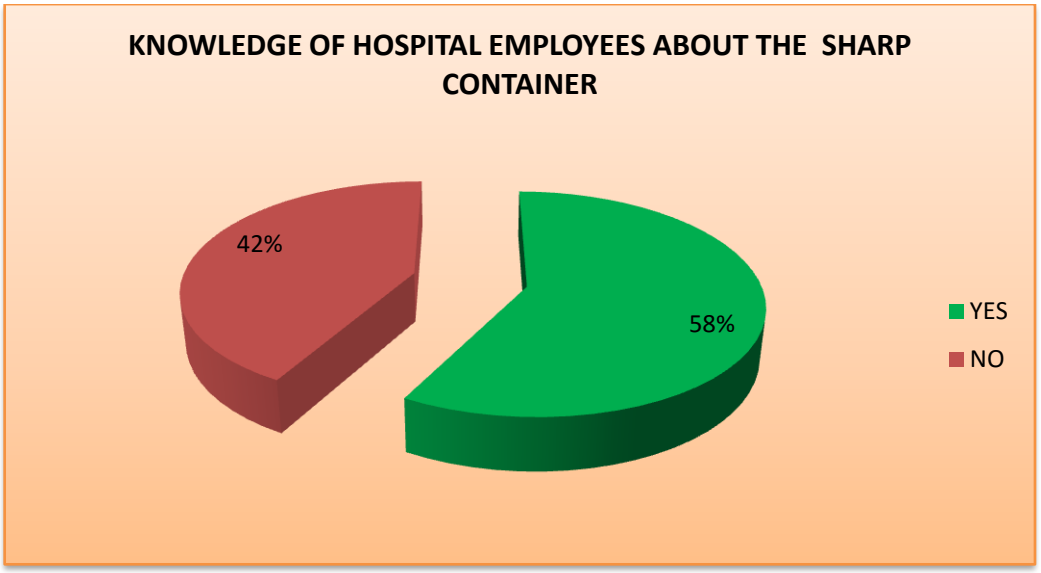


Fig2.4 (a) - knowledge about the sharp container among hospital staff

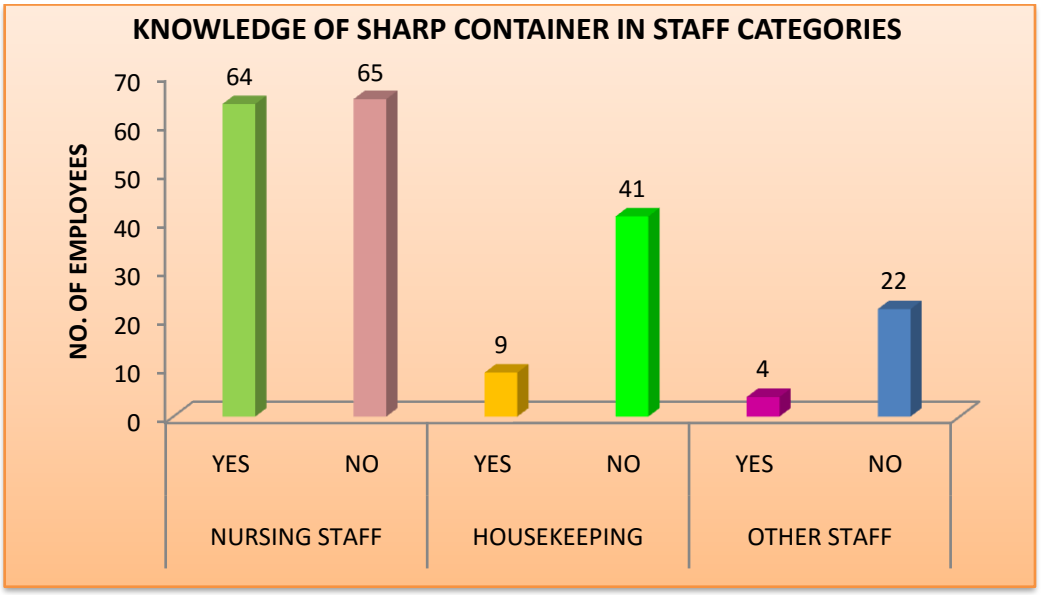


Fig2.4 (b)-knowledge about the sharp containers among various categories of the staff

Inferences-58%of the employee has good knowledge while 42% has poor knowledge about the solution used in sharp container.

3. Awareness about the Occupational Health by the Hospital Staff-

The data was collected related to their working conditions and various safety measures they adopt while working and are provided by the employer. They likart scale is used to analyze their answers. The employee were asked about their opinion on the following issues-

(3.1)Employees opinion regarding their working schedule -

The staffs were asked about their opinion on the working condition, work timings and other things which are included as a part of their job and might result into hectic work schedule. The data was then categorized into four category using likart scale-

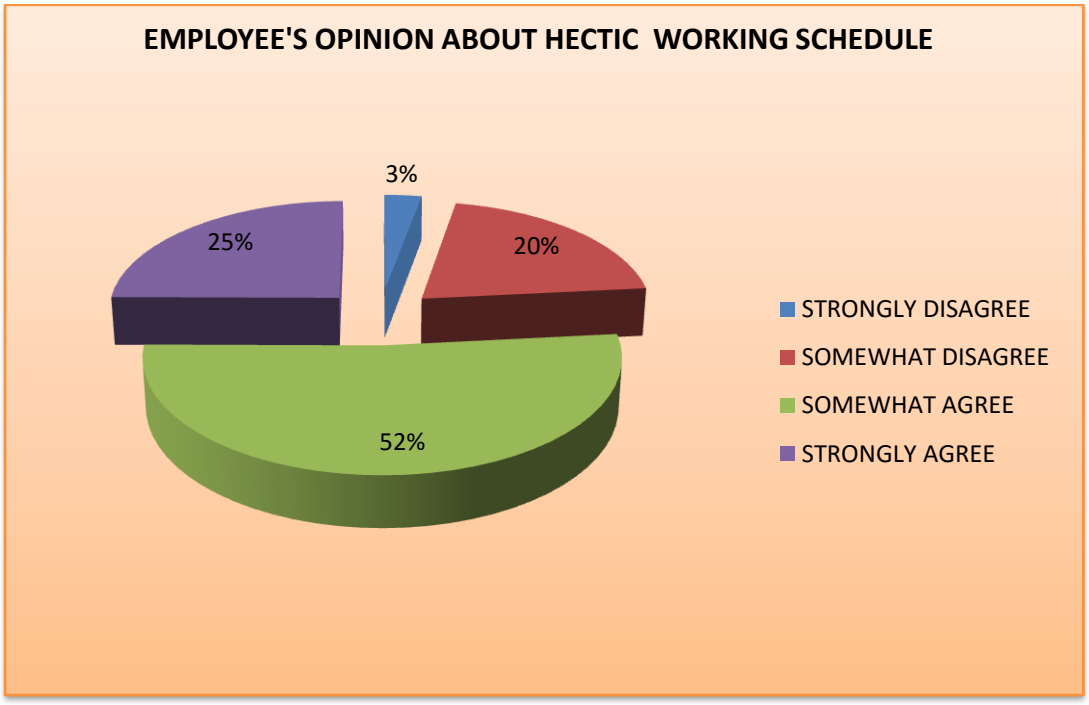


Fig3.1 (a) - Employee Opinion on the working schedule among hospital staff

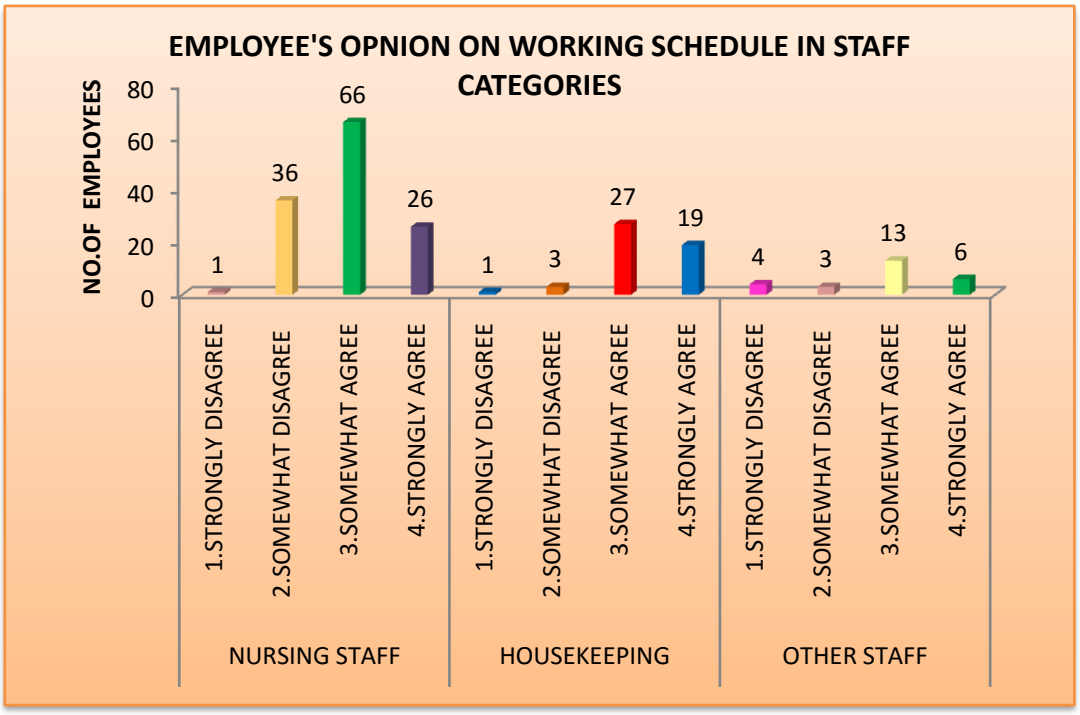


Fig3.1 (b)-Employee's Opinion on the working schedule among various categories of the staff

Inferences-77% of the employees is agreed while **23%** are disagreeing that their working schedule is hectic.

(3.2)Opinion of the staff about the stress and health status at their workplace-

The staffs were asked about their various working patterns and their opinion on the work related stress which not only affect physically but also mentally. The data was then analyzed using likart scale.

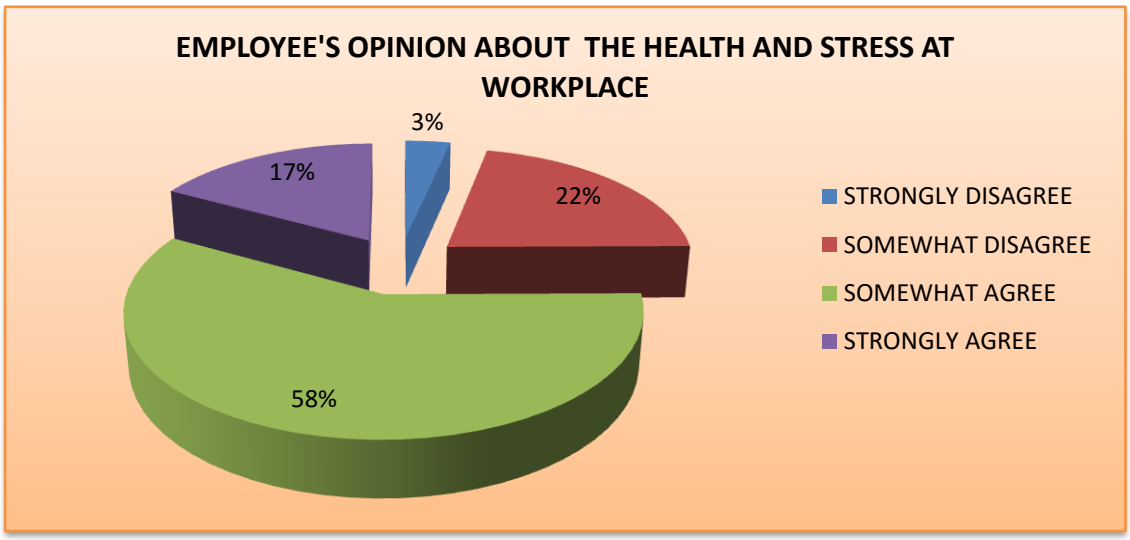


Fig3.2 (a)-Employees opinion on health and stress status among hospital staff

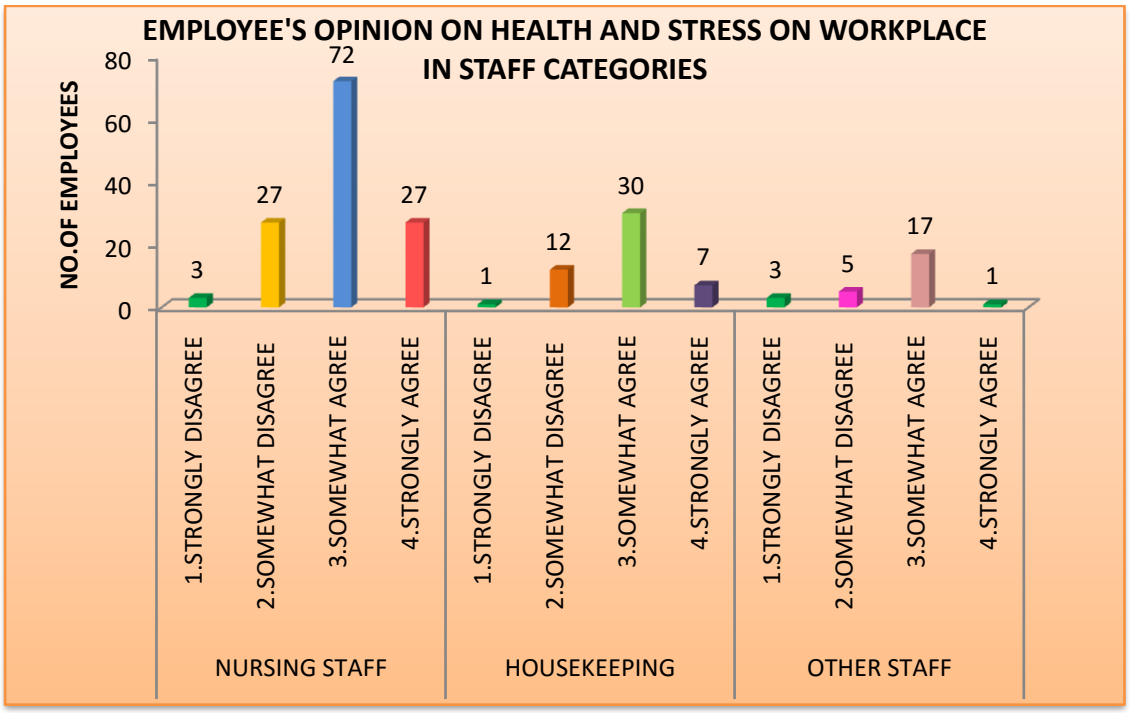


Fig3.2 (b)-Employees opinion on health and stress status among various categories of the staff

Inference-75% of the employees agrees while **25%** are disagreeing that work overload can cause stress and affects their health.

(3.3)Employees were asked about their opinion on workload injuries-

The employees were asked about their opinion on the workload and its relation to the injuries on the workplace. The data was then categorized into four category using likart scale-

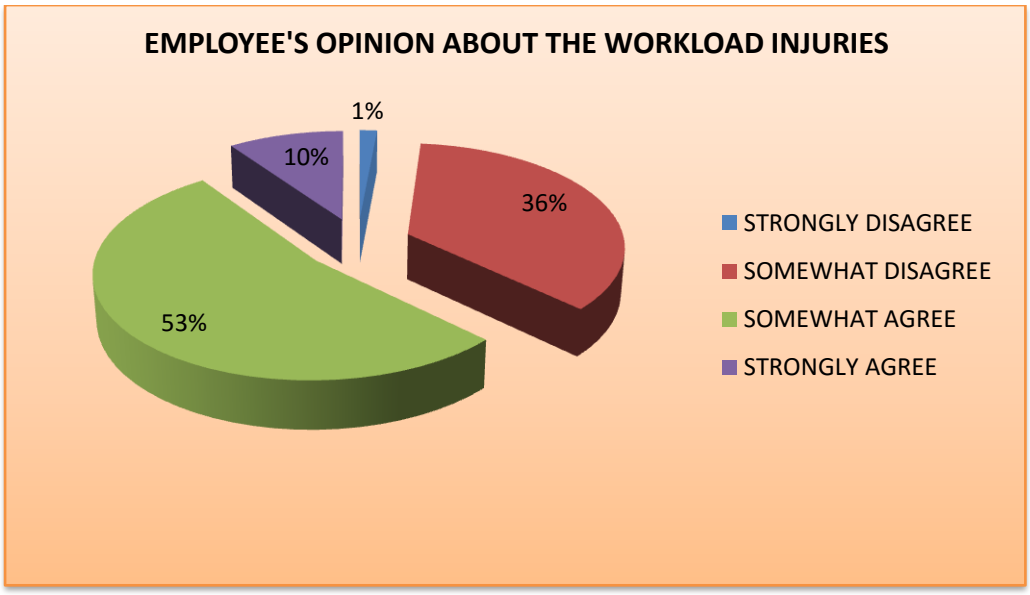


Fig3.3 (a) – workload injuries among hospital staff

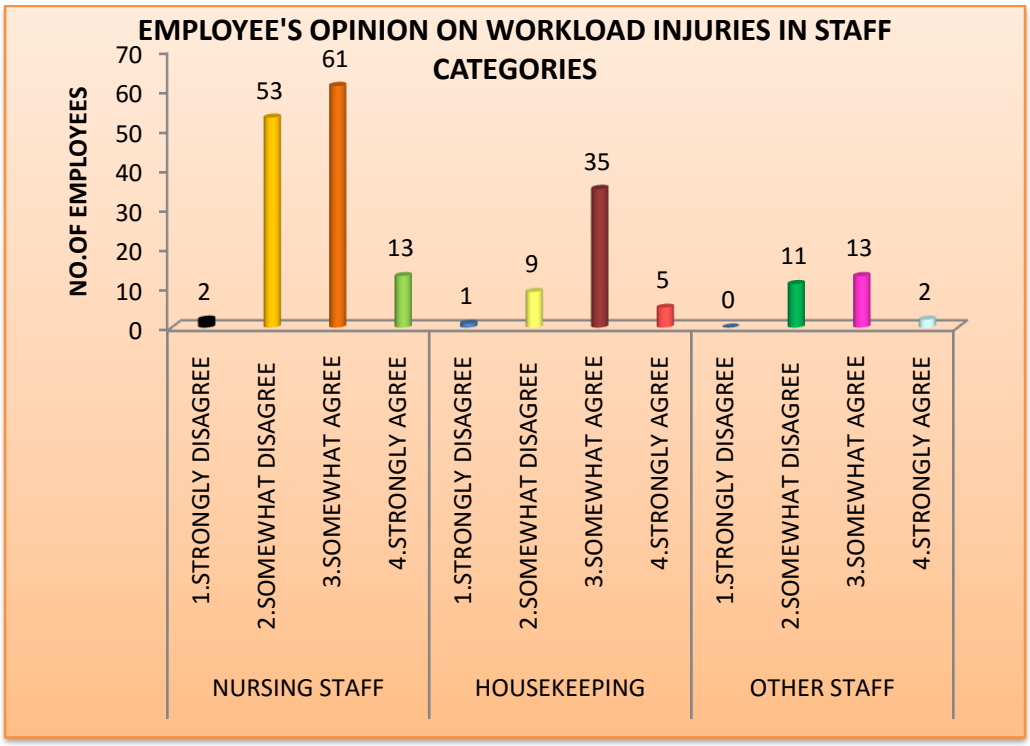


Fig3.3 (b)-workload injuries among various categories of the staff

Inference-63%of the employees agrees that while **37%** are disagreeing that injuries can occur due to work overload.

3.4 About safety manuals-

The data was collected about the manuals which are at their workplace being implemented by the management for their safety and thus helps in smooth functioning of their daily routine. The data was then categorized into four category using likart scale-

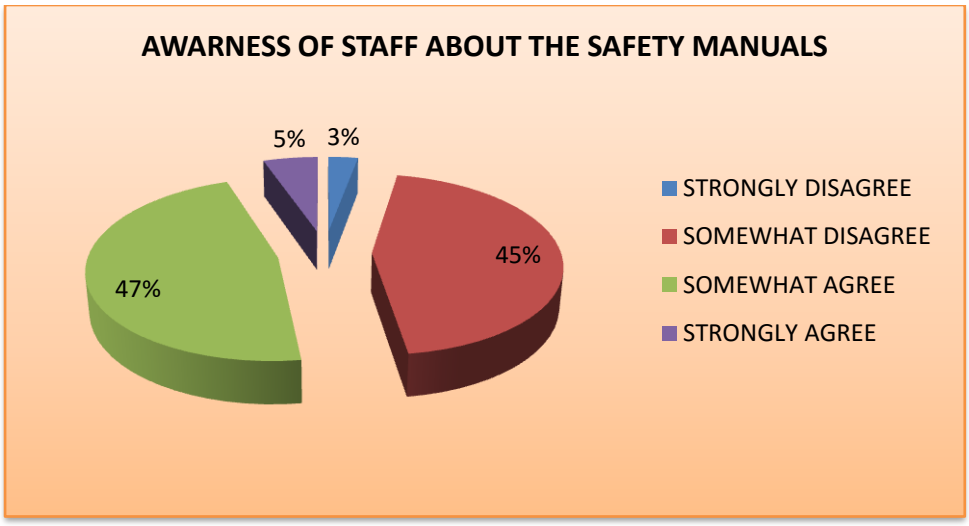


Fig3.4 (a)-Employee awareness on safety manuals among hospital staff

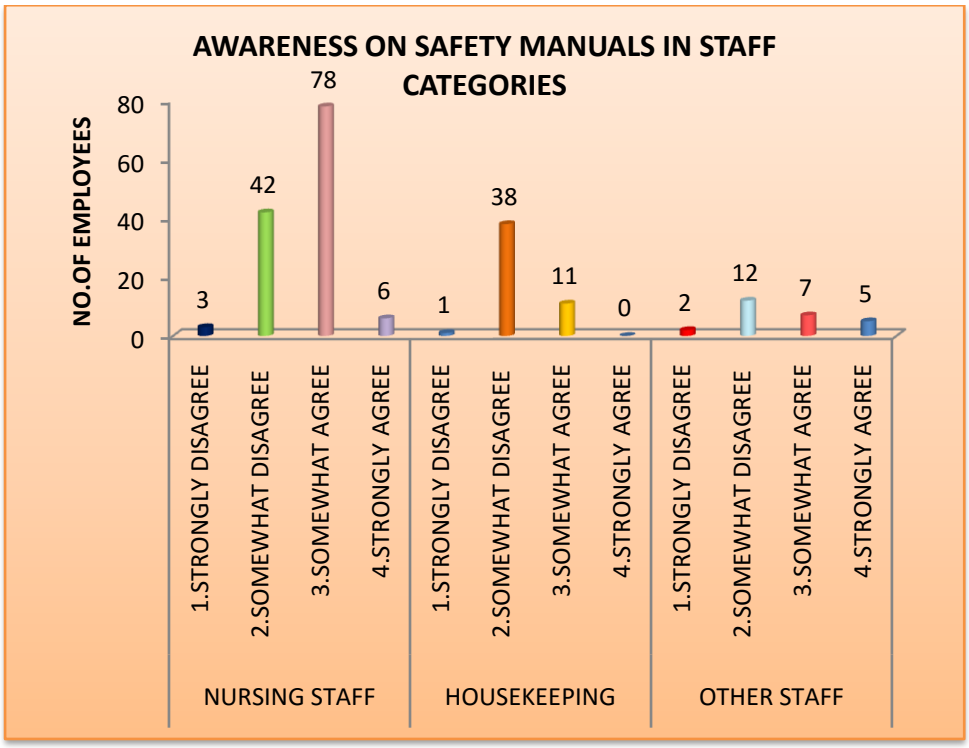


Fig3.4 (b)-Awareness on safety manuals among various categories of the staff

Inference-52% of the employees agrees while **48%** are disagreeing that they have been through the safety manuals.

(3.5) Opinion of the employees about the Employer concern on employee safety –

The employees were asked about the employer or management concern regarding staff safety issues in respect to providing safe workplace, also the various steps taken by the management regarding their safety issue. The data was then categorized into four category using likart scale-

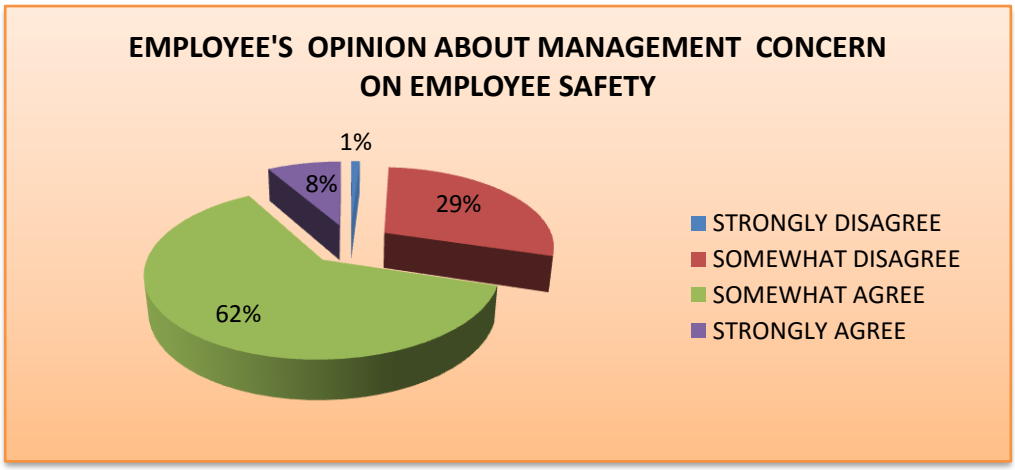


Fig3.5 (a) - Opinion on management concern among hospital staff

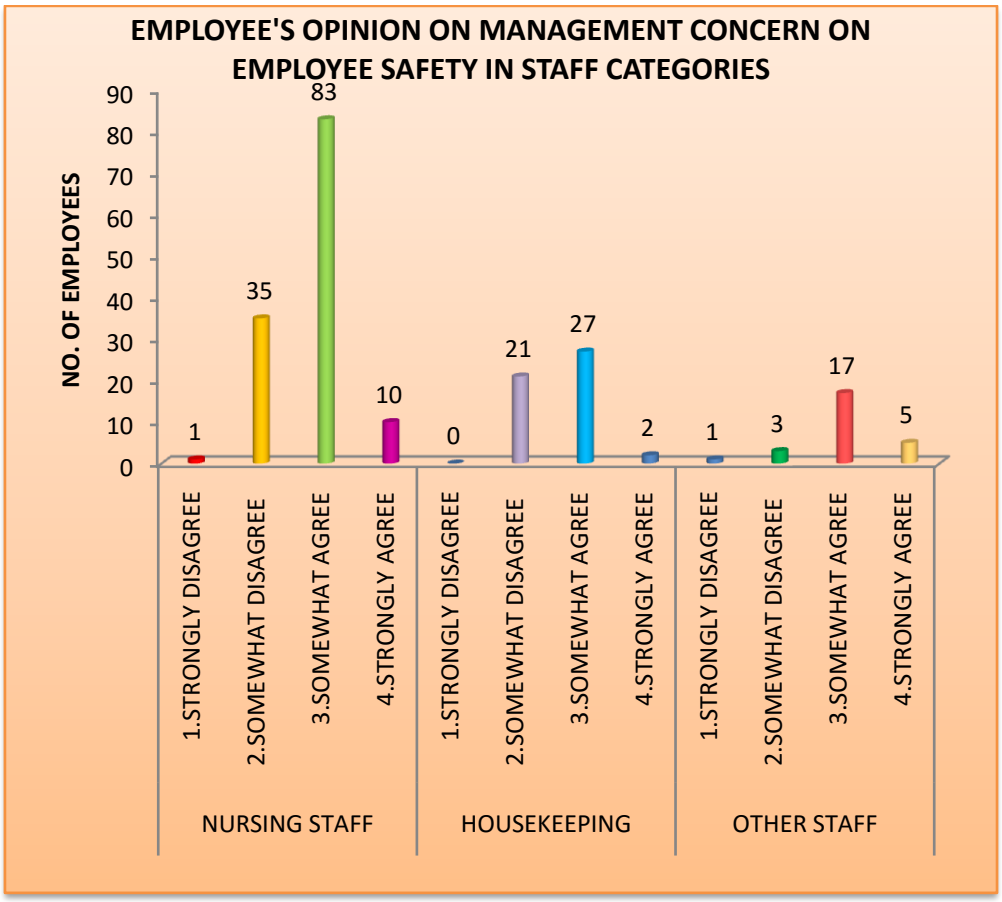


Fig3.5 (b)-Opinion on management concern among various categories of the staff

Inference-70% of the employee agrees while **30%** are disagreeing that management is concerned about their safety.

3.6Employees opinion about the safety guidelines which addresses the main issues of their working area-

The employees were asked to give their opinion on the safety guidelines which they received from the management side address all the main issues of their working area. The data was then categorized into four category using likart scale-

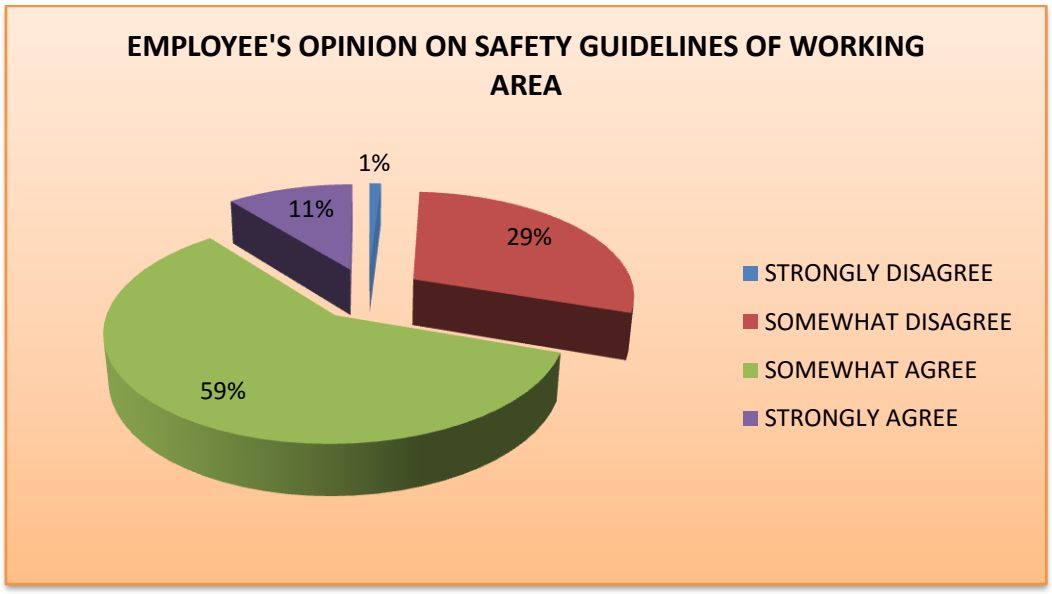


Fig3.6 (a)-Employees opinion on safety guidelines of working area among hospital staff

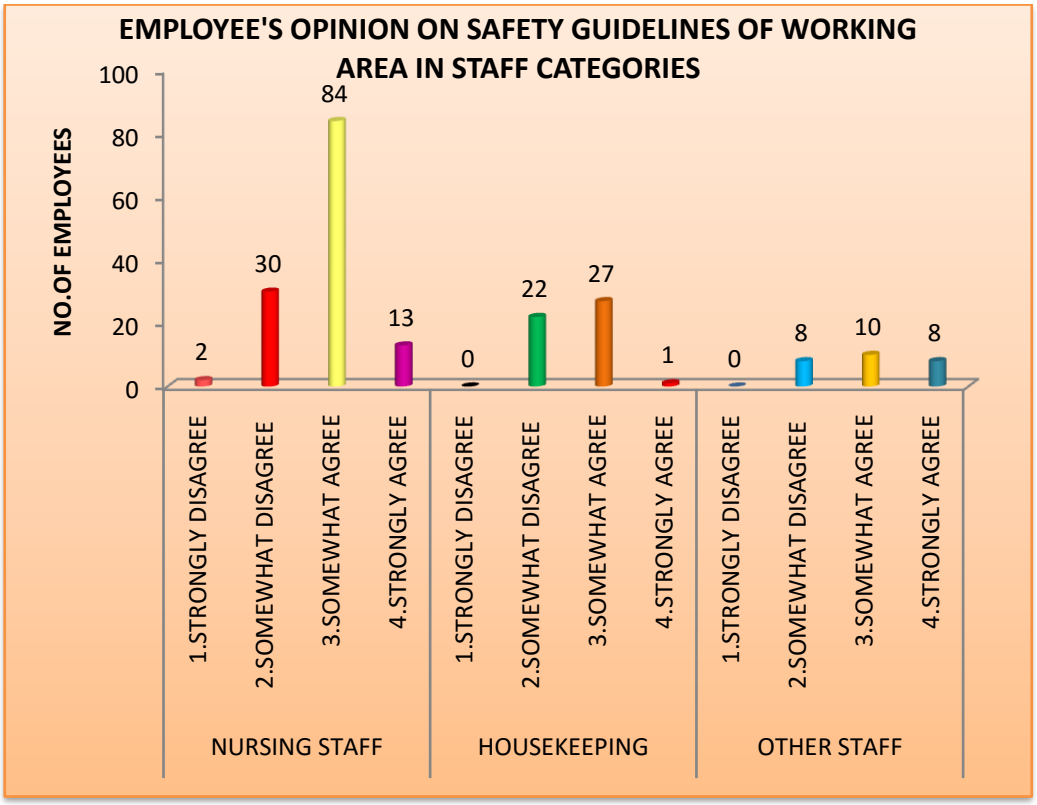


Fig3.6 (b)-Employees opinion on safety guidelines of working area among various Categories of the staff

Inference-70% of the employees agrees while **30%** are disagreeing that safety guidelines they received address the main issues of their working area.

B. TRAINING RECEIVED BY STAFF IN HOSPITAL-

1. Training received by the staff on safety in hospital-

The data was collected about the training which was given by the hospital to its staff related to the safety measures in hospital in regular intervals.

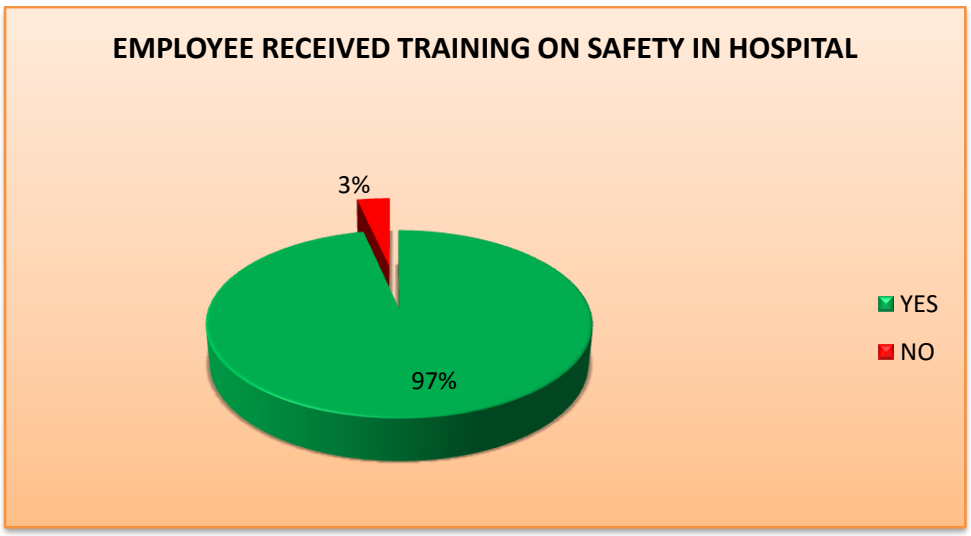


Fig1 (a)-training received on safety by hospital employee

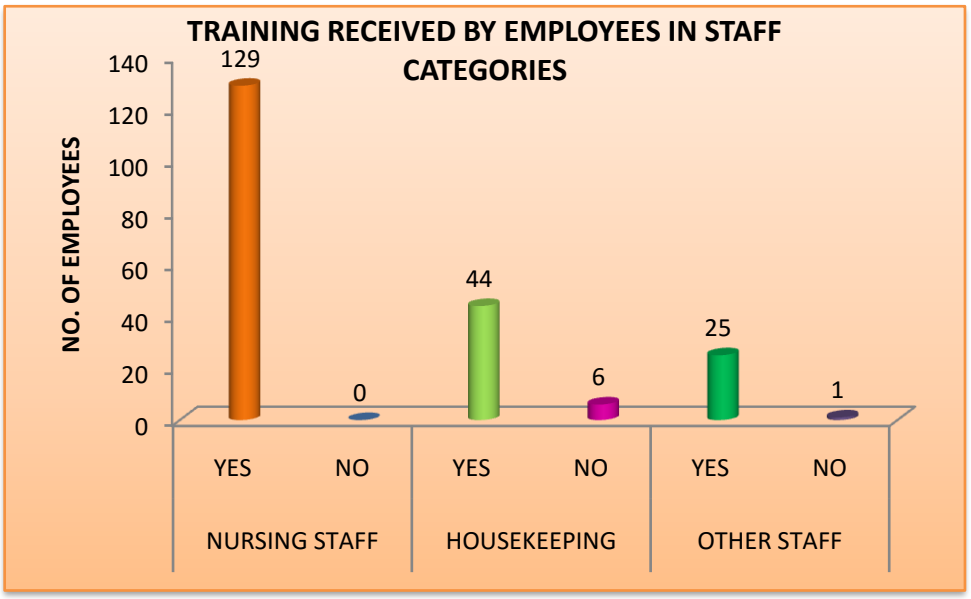


Fig1 (b)-training received on safety received among various categories of the staff.

Inference-97%of the employee received training while **3 %** didn't receive any training on safety in hospital.

2. <u>The time period of last training received by the hospital employees –</u>

About 198 out 205 employees had received training on safety in hospital. The training schedule also varies from employee to employee and in that the major chunk of the staff had received their last training session in less than 3 month time.

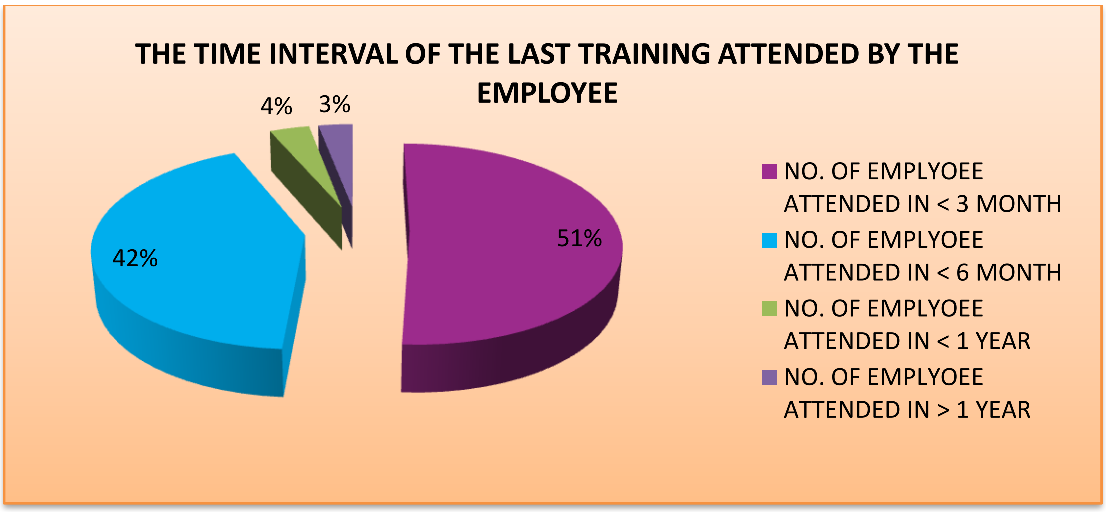


Fig2 (a)-The time interval of last training attended by the hospital staff

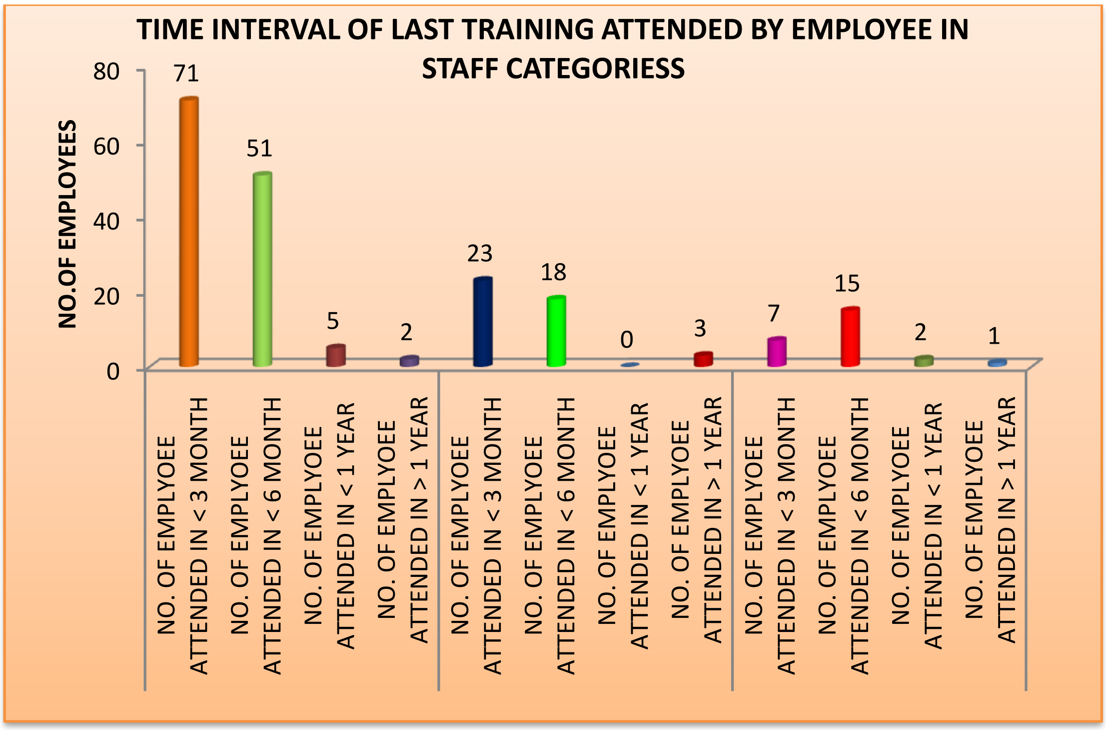


Fig2 (b) - The time interval of last training attended by the hospital staff

<u>Inference-</u>51% of the employee received training in within 3 months and 42%of the employee in last 6 month while 4% and 3% got training within 1 year and more than 1 year respectively.

3. Employees opinion on safety and prevention training of the occupation hazard of their working areas-

Employees were asked about the training they received regarding hazards and the safety in their working areas. The data was then categorized into four category using likart scale-

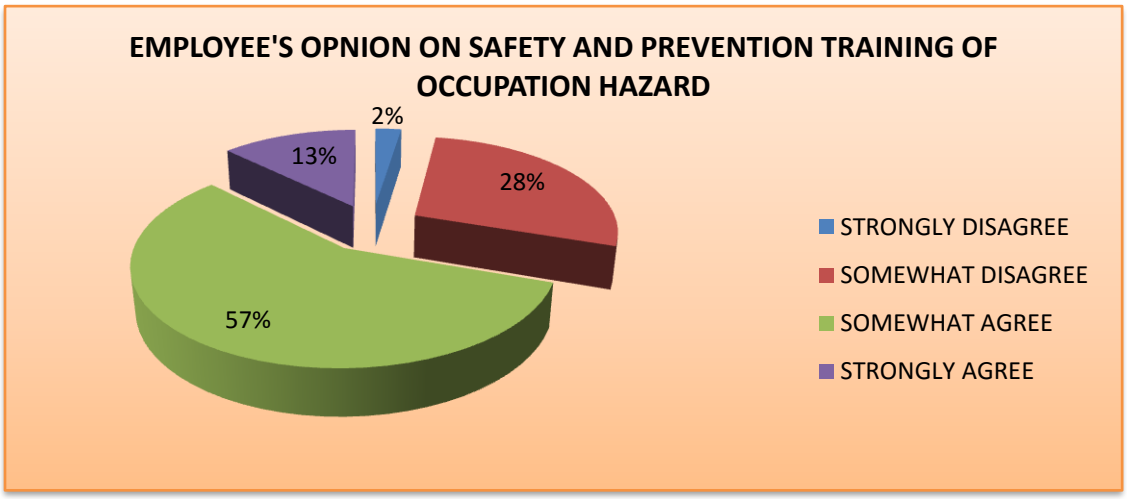


Fig3 (a) - Safety and prevention training on occupation hazard among hospital staff

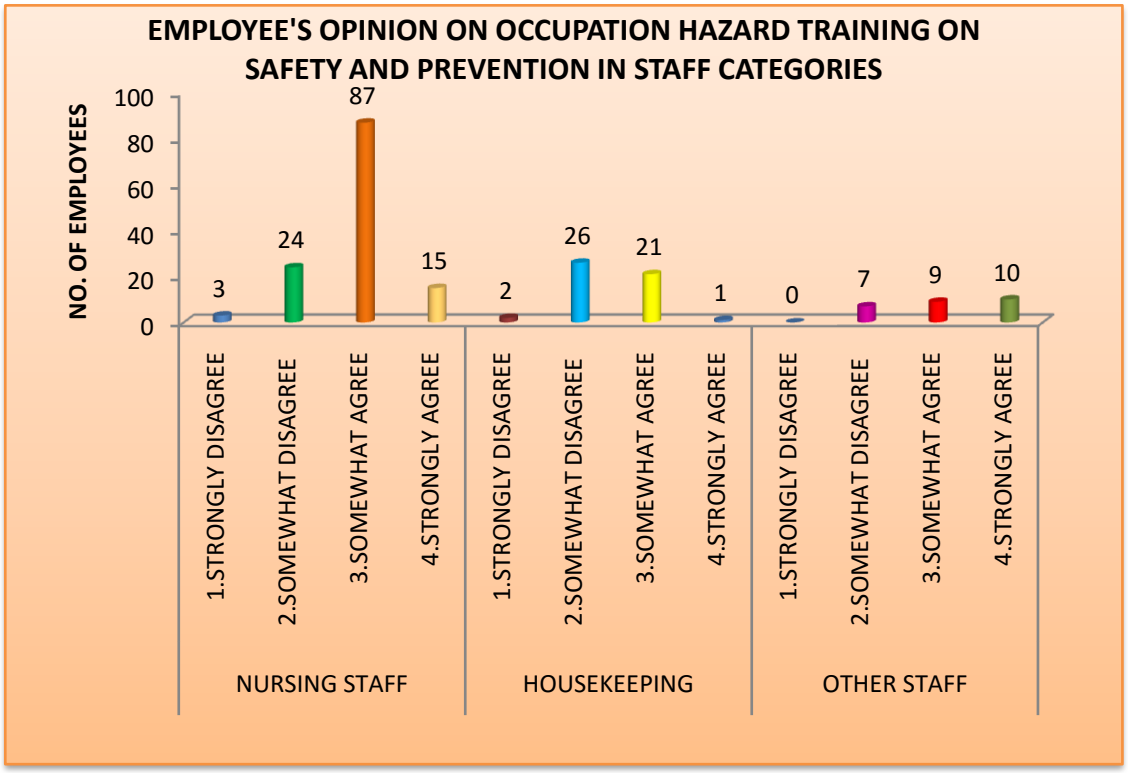


Fig3 (b) - Safety and prevention training on occupation hazard among various categories of the staff

Inference-70% of the employee agrees while **30%** are disagreeing that training on safety and prevention addresses the main issues.

4. <u>Employees opinion on the sufficient amount of training they received on safety and prevention –</u>

Employees are asked about the safety and prevention training they received and in their opinion whether the training given to them is sufficient enough in smooth functioning of their workplace and also helps in dealing with the safety issues.

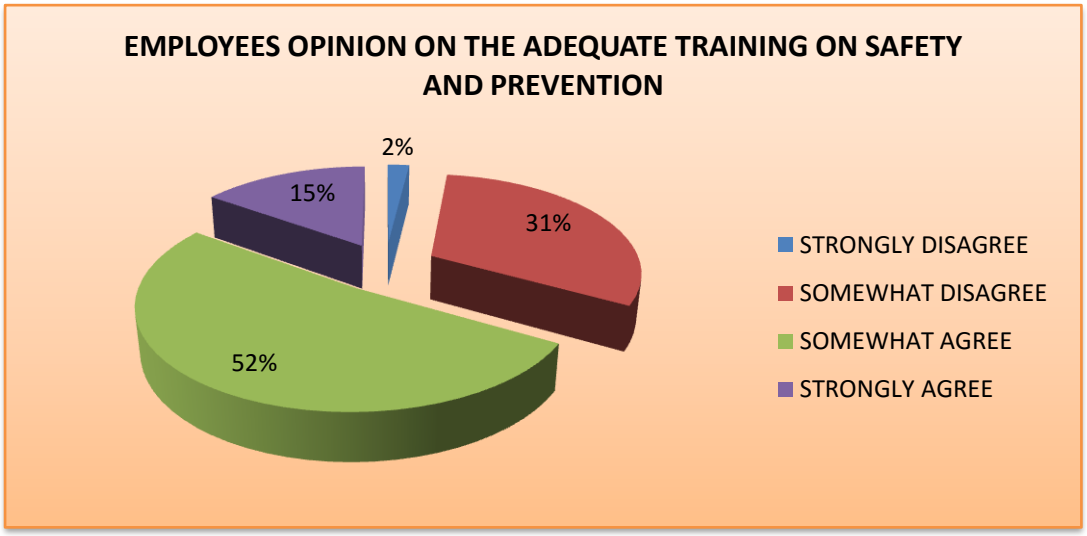


Fig 4(a)–Employees' opinion on adequate training on safety and prevention

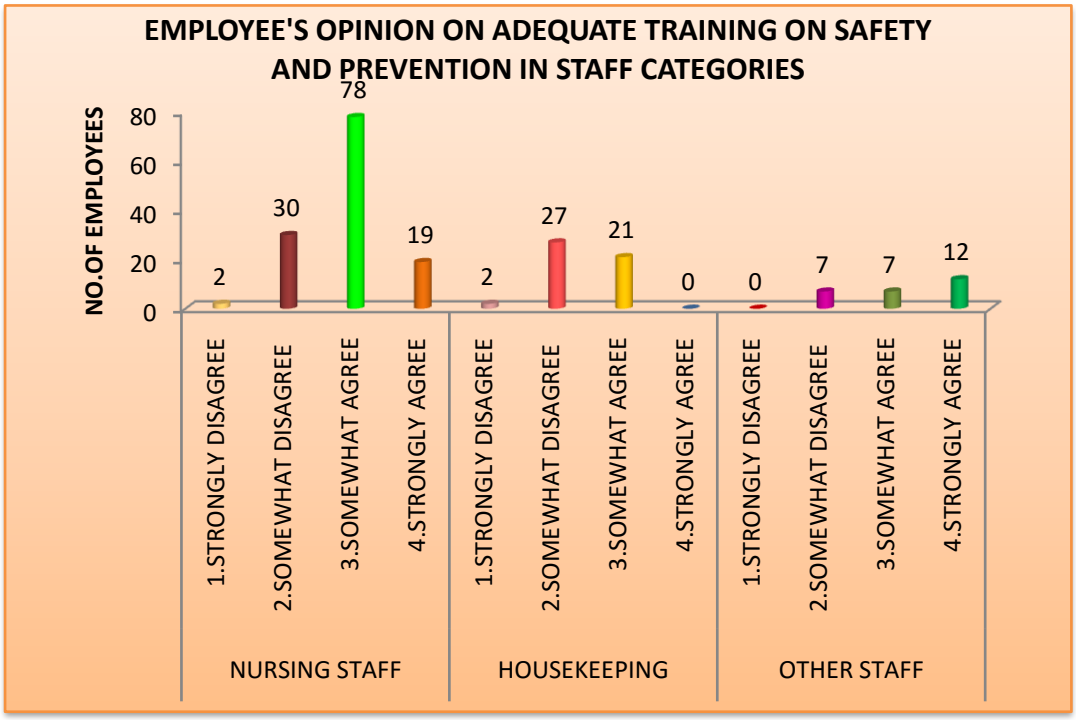


Fig4 (b)-Employee's opinion about adequate training on safety and prevention among various categories of the staff.

<u>Inference-</u>67% of the employees agrees while **33%** are disagreeing that training on safety and prevention is adequate enough.

INFERENCE, CONCLUSION AND RECOMMENDATIONS-

S.NO	ASSESSMENT CRITERIA	% OF COMPLIANCE	CONCLUSION	RECOMMENDATION
1.	**Knowledge about the emergency codes and protocols**	**49%**	**The staffs have poor knowledge about the codes and procedures followed during emergency.** **It is major area concern.**	**-there should regular/on the job training should be given.** **- Proper assessment of the training provided by the management.** **-Time to time mock drills**
2.	**NSI and its prevention**	**65%**	**It is a major area of improvement**	**-provide IEC material related to NSI prevention at the nursing station.** **-test should conduct at regular in the working areas.**
3.	**Infection control policy-** **-BMW** **-Hand hygiene** **-Hospital infection control**	**85%**	**The major chunk of the staff knows about the HIC but it was frequently observed that training sessions was taken casually by both trainer and the trainee.**	**There should be audit of the training session in regular intervals.**
4.	**According to the employees – management is concerned for employee safety**	**70%**	**70%agrees with the statement but still there is room for improvement**	**The hospital provide safe work culture** **-safety measures should be planned in a customized way for different departments.**
5.	**According to the employees their working schedule is hectic which can injuries and affects their health.**	**71%**	**71%of the staff agrees and feel that their working schedule is hectic**	**-Proper counseling of staff by respective superior personal** **-take appropriate measures which addresses accordingly.**
6.	**Health check up of the hospital employees**	**92%**	**It shows that the most of the staff had their health check up in the year of joining**	**The hospital administration should convey the importance of health check up through the CNE and other**

			which was reduced in consecutive years.	**training programs to the employees.** **-there should be monitoring and tracking of the health check up status of the employees from H.R**
7.	**According to the employees the training they receive addressees the main issues and is adequate enough**	**78%**	**78% agrees with the statement**	**The hospital should continue with its current policy of training at regular intervals.**
8.	**Training received by hospital staff**	**97%**	**The hospital provides proper training and has good training program**	**The hospital should continue with current policy of the safety training of the staff.**

LIMITATIONS OF THE STUDY:-

- The study does not include the medical officers, consultants and the night duty staff.
- Since the study was conducted in the peak working hours which might be reason of trivial answers from some of the respondents.

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ANNEXURES

1. STRUCTURED QUESTIONNAIRE USED FOR STUDY

To assess the health and safety of the staff

Please read the instructions carefully and mark the answer in the appropriate column.

GENERAL INFORMATON-

1. Name-_____ Department - _____
2. Since how long you are working here?
   _____
3. What is your area of expertise?
   _____
4. Have you received any training on safety in hospital?
   ☐ Yes ☐ No
5. If yes then when did you received your last training?
   ☐ <3month ☐ <6month
   ☐ <1year ☐ >1year
6. Have you ever had any injury while working in this hospital?
   ☐ Yes ☐ No
7. If yes then what kind of injury did you met with?
   ---
8. Is there any health check up being done by the hospital?
   ☐ Yes ☐ No
9. If yes then at what time interval?
   ☐ Once a year
   ☐ Twice a year
10. Are you familiar with what to do when faced with the following Situations?

S.No		Yes	No	Comments
1.	What you do in case of emergency such as fire including evacuation			

	routes			
2.	Do you know about the various Codes that are used in case of emergency			
3.	What you do in case of chemical spill			
4.	What to do in case of any chemical exposure			
5.	What you do in case of electric shock			
6.	What type of most hazardous material you work with and the precaution you take			
7.	What type of personal protective equipment provided to you			
8.	Have you ever come across with needle stick injury?			
9.	If yes what you did in case of NSI injury?			
10.	Do you know how to prevent NSI?			

Please read instructions and mark appropriately

Mark any one of the option in the question (11-20)

1. Strongly disagree 2. Somewhat disagree 3. Somewhat agree 4. Strongly agree

S.no		*1*	*2*	*3*	*4*
11.	Do you feel your working schedule is hectic?				
12.	*Do you feel you are overloaded with work which affects your health and feel stressed?*				
13.	*Do you feel injuries can occur because of work overload?*				
14.	*Have you been through the safety manuals*				
15.	*Is the management is concerned about employee safety?*				
16.	*Do you think training you received on safety and prevention of occupation hazard addresses your main issues*				
17.	*Do you feel the training on safety and prevention in adequate enough?*				
18.	*Do you the think that safety guidelines you received address all the main issues of your working area?*				
19.	*Do all the safety measures are properly monitored?*				
20.	*Do you feel the housekeeping in you meet the safety standards?*				

21. Do you know about the basic hand washing technique? (Please Explain)
☐ Yes ☐ No

22. Which solution do you use for hand washing?

_____

23. Do you know about how waste is segregated in different bags?

BLUE-_____

RED- _____

YELLOW-_____

BLACK-_____

24. When these bags should be emptied?

☐ 1/4thfull ☐ 3/4th full

☐ 100%full ☐ none

25. What solution used in sharp container?

_____

26. Please give your suggestions to improve safety and working Conditions?

_____

_____

2. OCCUPATIONAL HEALTH AND SAFETY CHECKLIST

HOUSEKEEPING	YES	NO
1. Are uniforms left in the institution or taken home in plastic bags and washed with bleach so infections are not spread to the house?		
2. Are clean uniforms provided if necessary during the day?		
3. Do employees wear different shoes on the job and leave them in the institution?		
4. Are there plastic liners in all garbage pails?		
5. Are garbage pail liners changed daily, including on weekends?		
6. Are all garbage pails covered?		
7. Are liquids disposed of only in sinks or where appropriate in safety cans?		
8. Are sharp objects never put in garbage pails?		
9. Are there special boxes for disposal of needles and sharps?		
10. Is the garbage pail in a patient's room used only for paper waste?		
11. Is garbage with blood and other specimens in it identified as such?		
12. Is contaminated garbage autoclaved or incinerated?		
13. Are employees instructed never to stand on the top two steps of a ladder?		
14. Is any equipment or furniture that is heavy or awkward to handle lifted or moved by more than one person or by mechanical devices?		
15. Do all electrical appliances such as vacums and polishers have grounded connections?		
16. When floors are being scrubbed or polished, is the area identified as being slippery by posting or roping off the area?		
17. Is all trash handled as if hazardous items were contained in the refuse?		
18. Are all cleaning solutions clearly labelled with ingredients and warnings indicated?		
19. Are housekeeping personnel required to wear gloves and protective clothing?		
20. Is isolation garbage and laundry handled in specially marked bags?		

FOOD SERVICE	YES	NO
1. Are stove hoods kept clean and filters replaced when dirty?		
2. Are only proper sized filters used in stove hoods?		
3. Are kitchen employees instructed in use of fire extinguishers?		
4. Where automatic fire control systems are used, is the head or nozzle directed towards the potential fire area?		
5. Are meat saws, slicers and grinders properly guarded?		
6. Are tamps or push sticks used to feed food grinders and choppers?		
7. Are food cart wheels and drawers in good repair?		
8. Are carbon dioxide tanks secured or stored where they cannot be knocked over?		

9. Are all gauges in good working order?		
10. Are all exposed drive belts, gears, chains and sprockets on dishwashers, conveyors and other equipment guarded?		
11. Are dumbwaiters securely shut when not in use?		
12. Are steam, gas and water pipes clearly marked for identification?		
13. Are knives kept sharpened and in good condition?		
14. Are cuts always made away from the body?		
15. Are knives, saws and cleavers kept in designated area when not in use?		
16. Are blades stored with the cutting edge covered?		
17. Is hand protection readily available for handling hot utensils?		
18. Are the handles of cooking utensils turned toward the back or side of the stove?		
19. Do employees stand to the side of a unit when lighting gas stoves and ovens?		
20. Are broken dishes and spilled food cleaned up immediately?		
21. Are all exits, passageways, fire extinguishers or electrical breaker panels clear of carts, boxes, trash cans or other items?		
22. Are all fans (including fans in coolers and refrigeration units) less than 7 feet from the floor guarded with openings no longer than ½ inch?		
23. Are microwave ovens cleaned often?		
24. Are the door seals on the microwave ovens in good condition so the door closes securely?		
25. Are microwave ovens checked at least every 3 months for leakage?		
26. Are there metal treadle guards placed over foot controls on steam cleaning machines for garbage cans or other items to prevent accidental operation of pedals?		
27. Are heavy lids on equipment such as a steam kettle secured to prevent accidental falling?		
28. Do machines for slicing, grinding, cutting, etc. have guards on all toggle switches to prevent accidental starting?		
RADIOLOGY	YES	NO
1. Are rooms housing radiation sources properly marked and only authorized personnel allowed in the area?		
2. Where portable x-ray units and radioisotopes are used, are only the patient and trained personnel allowed in the room?		
3. Are x-ray room doors kept closed when equipment is in use?		
4. Are all x-ray machines checked before each use to ensure that the secondary radiation cones and filters are in place?		
5. Are dosimeters worn by all personnel exposed to ionizing radiation sources?		
6. Does each exposed employee have his or her own badge?		
7. Are these exposure levels analyzed and the results recorded?		
8. Are all personnel notified that they have a right to know what their radiation exposures are?		
9. Do employees wear proper eye protection to prevent exposure when using or repairing ultra-violet and infra-red instruments or equipment?		
10. Are all radiology rooms, whether for storage or procedures lead lines?		

LAUNDRY	YES	NO
1. Are non-skid mats or flooring provided in wet areas?		
2. Do employees wear non-skid boots or shoes?		
3. Is there a hospital procedure for preventing sharp objects from being left in laundry?		
4. Is all laundry handled as if hazardous instruments were present in the laundry?		
5. Is there adequate ventilation in the laundry?		
6. Are portable air fans adequately guarded and properly grounded?		
7. Is hot equipment shielded so employees are protected from the heat?		
8. Do employees have access to water and cool air to combat heat stress?		
9. Do employees get breaks away from the heat and are they rotated out of the hotter jobs?		
10. Are all employees handling dirty laundry wearing gloves, masks, caps and gowns?		
11. Is there a required clean up procedure and disinfectant soap available in the laundry?		
12. If a worker shifts from clean to dirty laundry or vice versa, does she or he change clothes in between?		
13. Is dirty laundry picked up and sorted daily?		
14. Are there special procedures for handling isolation room laundry?		
15. Is isolation room laundry clearly labelled?		
16. Are water soluble bags used for isolation laundry?		
17. Are carts used only for dirty laundry or clean laundry, never for both?		
18. Are linen transport carts labelled "soiled" and "clean"?		
19. Are these carts cleaned with a germicide on a regular basis?		
20. Is the clean linen room kept dusted, vacuumed and clean?		
PATIENT CARE AREA	YES	NO
1. Are aisles and passageways wide enough for the movement of personnel and materials?		
2. Are passageways and halls free of boxes or other articles being stored?		
3. Are floors treated with non-slip material and are this treatment maintained?		
4. Are electrical cords for lights, T.V.'s, radios and patient monitoring equipment placed so as to prevent tripping hazards?		
5. Are needles and other sharp instruments discarded only in designated containers?		
6. Are drug ampoules broken only by using a metal file after the ampoule tip has been covered with gauze?		

7. Are microwave ovens used only in designated areas?		
8. Are microwave ovens used only in designated areas?		
9. Are acids and other chemicals properly labelled and safely stored and handled?		
10. Are spills (water, flower petals, etc) cleaned up promptly?		
ISOLATION PATIENTS	YES	NO
1. Is there a written hospital procedure for dealing with isolation cases ?		
2. Are all employees informed of the procedure?		
3. Is the isolation room clearly marked with the type of isolation?		
4. Do all employees entering the patient's room have on shoe coverings, masks, caps, gloves and gowns?		
5. Are there foot pedal sinks and washing facilities immediately available outside the room?		
6. If there are no foot pedal sinks, do employees use paper towels for turning faucets on and off?		
7. Do all employees, including doctors, wash up as soon as they leave the isolation room?		
8. Is everything used by the isolation patient disposed of in the room or put in special bags to be carried out?		
9. Is there a basket for disposing of gowns worn in the room?		
10. Are isolation carts adequately stocked?		
11. Are isolation patients maintained in isolation while being transported and being x-rayed?		
LABORATORIES	YES	NO
1. Are chemical workers' goggles or face shields worn when doing work that could involve accidental splashes to the face or eyes?		
2. Are all flammable materials kept in approved safety containers?		
3. Is no more than one day's supply of flammable materials kept in the work area outside an approved storage cabinet?		
4. Is an exhaust hood used when working with toxic, flammable or explosive material?		
5. Are hoods used for working with TB and fungus cultures?		
6. Is the ventilation rate of all hoods recorded and kept near the hoods for future reference?		
7. Are eye wash facilities and safety showers immediately available if acids or caustics are used in the lab?		
8. Are these facilities checked periodically?		
9. Are the areas around the eye wash and shower facilities kept clear and functioning at all times?		
10. Is a chemical cartridge respirator for use with acid gases and organic vapors readily available for use during clean up of spills?		
11. Are co^2 or dry chemical fire extinguishers provided and properly mounted and maintained?		

12. Are all chemicals labelled and dated on the day received?		
13. Are all lab coats taken off when leaving lab for the day or for lunch?		
14. Are a sufficient number of automatic pipetting devices available?		
15. Are disposable pipettes always thrown away and never reused?		
16. Are non-disposable pipettes autoclaved between uses?		
17. Are there special procedures for disposal of chemicals?		
18. Are garbage cans large enough to hold all refuse without spilling over?		
19. Are garbage cans covered?		
20. Are separate containers used for the disposal of glass, syringes and needles?		
21. Are liquid wastes kept separate from solid?		
22. Are needles disposed of separately in an impervious container?		
23. Are slides disposed of separately to insure that no one is cut or contaminated?		
24. Are specimens centrifuged with stoppers in them?		
25. If a specimen breaks in the centrifuge, is the centrifuge washed and thoroughly disinfected before reuse?		
26. Are lab coats or uniforms disposed of separately if they are worn while handling known infectious samples?		
27. Are gloves worn in the lab when working with toxic chemicals?		
28. Are contaminated materials disposed of in clearly marked containers?		
29. Is the container cleaned periodically?		
30. Is the container double bagged and covered when material requires it?		
31. Is contaminated garbage autoclaved?		
MAINTENANCE AND ENGINEERING	YES	NO
1. Are materials stacked neatly and not scattered in aisles and over floors?		
2. Are all drive belts guarded?		
3. Are chains and sprockets, gears and shafting properly enclosed?		
4. Are tool rests, adjustable tongue guards and spindle guards installed and properly adjusted on all grinders?		
5. Are there blade guards on table saws, band saws and radial arm saws?		
6. Are metal ladders never used by employees working on electrical equipment, wiring or changing light bulbs?		
7. Are broken ladders destroyed or tagged and removed from service until repaired?		

8. Are battery charging areas designated "no smoking" and well ventilated?		
9. Is gasoline-powered equipment operated in well ventilated areas?		
10. Are protective clothing and equipment provided for and worn by all employees exposed to hazards requiring protection such as - gloves for handling hot, wet or sharp objects and chemicals for. Eye and face protection - for protection from chips, sparks, glare and splashes hearing protection - for protection from noise sources. Local exhaust - wood dust.		
11. Are fuel and flammable gas cylinders stored separately from oxidizing gas cylinders?		
12. Are all compressed gas cylinders chained or secured in some way?		
13. Are oxygen and fuel gases separated by at least 20 feet?		
14. Are all cylinders stored away from heat sources such as radiators, steam pipes and direct sunlight?		
15. Are all cylinders kept free of grease?		
16. Are trash compactors operable only in the closed position?		
17. Are there guarding devices on trash compactors such as two-hand controls, electric eyes or emergency shut off bars?		
18. Is compressed air used for cleaning purposes regulated to discharge at under 30 psi?		
19. Are approved dust respirators worn when insulation is being replaced, to avoid inhalation or asbestos and glass fibers?		
20. Are rubber gloves and goggles or a face shield worn when handling concentrated liquid ammonia?		
21. Are rubber gloves and respirators approved for use with organic dusts and vapors worn by employees applying pesticides?		
22. If there is adequate ventilation in areas being painted are respirators approved for use with organic vapors worn?		
23. Are solvent resistant (Neoprene) gloves worn by employees working with solvents such as methyl, ethyl ketone, acetone or stoddard solvent?		
SPECIMEN HANDLING	YES	NO
1. Are specimens put tightly sealed in individual bags?		
2. Are all people handling specimens required to wash their hands after handling them?		
3. Are all specimens handled as if they were contagious?		
ALL DEPARTMENTS	YES	NO
Walking and Working Surfaces, Aisles and Floors		
1. Are all places of employment kept clean and orderly?		
2. Are floors, aisles and passageways kept clean and dry and all spills cleaned up immediately?		
3. Are floor holes such as drains covered?		
4. Are halls kept free of obstacles (beds, books, etc)?		

5. Are permanent aisles appropriately marked?		
6. Are wet and/or greasy areas covered with non-slip materials or mats?		
7. Are mats (rubber and wood) in good repair?		
8. Are carpets kept tight so they will not roll or bunch up?		
9. Are all electric cords or phone cords which run across aisles or passageways covered?		
LADDERS	YES	NO
1. Have defective ladders (e.g. With broken rungs, broken steps, or split side rails) been tagged as "DANGEROUS, DO NOT USE" and remove from service for repair or destruction?		
2. Is the use of the top of an ordinary step ladder as a step prohibited?		
EXITS AND EXIT MARKINGS	YES	NO
1. Are all exits marked with an exit sign and illuminated by a reliable light source?		
2. Is the direction to exits, when not immediately apparent, marked with visible signs?		
3. Are doors or other passageways, that are neither exits nor access to an exit and located where they may be mistaken for exits, appropriately marked "NOT AN EXIT", "TO BASEMENT", "STOREROOM", etc.?		
4. Are exit doors side-hinged?		
5. Are all doors that must be passed through to reach an exit or way to an exit, always free to access with no possibility of a person being locked inside?		
MEDICAL AND FIRST AID	YES	NO
1. Are First Aid Kits easily accessible in non-patient work areas?		
2. Is there a routine immunization program for employees exposed to infectious diseases?		
3. Are all employees required to have annual check-ups?		
4. Are emergency phone numbers posted?		
6. Where employees may be exposed to injurious corrosive materials, are they provided with quick drenching and flushing facilities for immediate emergency use?		
FIRE PROTECTION, EXTINGUISHERS	YES	NO
1. Are the extinguishers selected for the types of combustibles and flammables in the areas where they are to be used?		
2. Are extinguishers fully charged and kept in their designated places?		
3. Are extinguishers located along normal paths of travel?		
4. Are extinguisher locations kept free from obstruction or blockage?		

5. Are extinguishers not mounted too high? If less than 40 pounds, the top must not be higher than 5 feet above floor; if greater than 40 pounds, The top must not be higher than 3½ feet above floor.		
6. Have all extinguishers been serviced, maintained, and tagged at intervals not exceeding one year?		
7. Are all extinguishers checked (by management or designated employee) monthly to see if they are in place or if they have been discharged, etc.?		
8. Have all extinguishers been hydrostatically tested according to schedules set for the type of extinguisher?		
ELECTRICAL HAZARDS	YES	NO
1. Have exposed wires, frayed cords and deteriorated insulation been repaired or replaced?		
2. Are junction boxes, outlets, switches and fittings covered?		
3. Is all metal fixed electrical equipment grounded?		
4. Does all equipment connected by cord and plugs have grounded connections?		
5. Are electrical appliances such as vacuums, blowers, vending machines, coffee pots, hot plates, toasters, etc. grounded?		
6. Are all portable electrical hand tools grounded? (Double insulated tools are acceptable without grounding).		
7. Are breaker switches identified as to their use?		
8. Are any flexible cords and cables run through walls, ceilings, doorways or windows?		
9. Are flexible cords and cables never substituted for fixed wiring?		
10. Is electrical disconnected equipment accessible?		
11. Are all extension cords in use of appropriate wiring to carry the current being drawn?		
MACHINERY AND MACHINE GUARDING	YES	NO
1. Do fans less than 7 feet above floor have guards with openings of ½ inch or less?		
2. Are all pieces of equipment with an electric motor or any electrical connection effectively grounded?		
3. Are belts, pulleys and rotating shafts properly guarded?		
4. Are chains, sprockets and gears properly guarded?		
5. Are all in-going nip points properly guarded?		
6. Are all blades, saws and sharp edges properly guarded?		