A STUDY ON ASSESSMENT OF KNOWLEDGE AND AWARENESS OF BIOMEDICAL WASTE MANAGEMENT PROCESS AMONG HOSPITAL STAFF IN SADBHAVNA MEDICAL AND HEART INSTITUTE, PATIALA, PUNJAB

Guided by :
Dr Deepti Sharma

Submitted by:
Dr Aksharika Sharma
Roll no. 1061
MBA – HM 25 (Hospital management)

Introduction

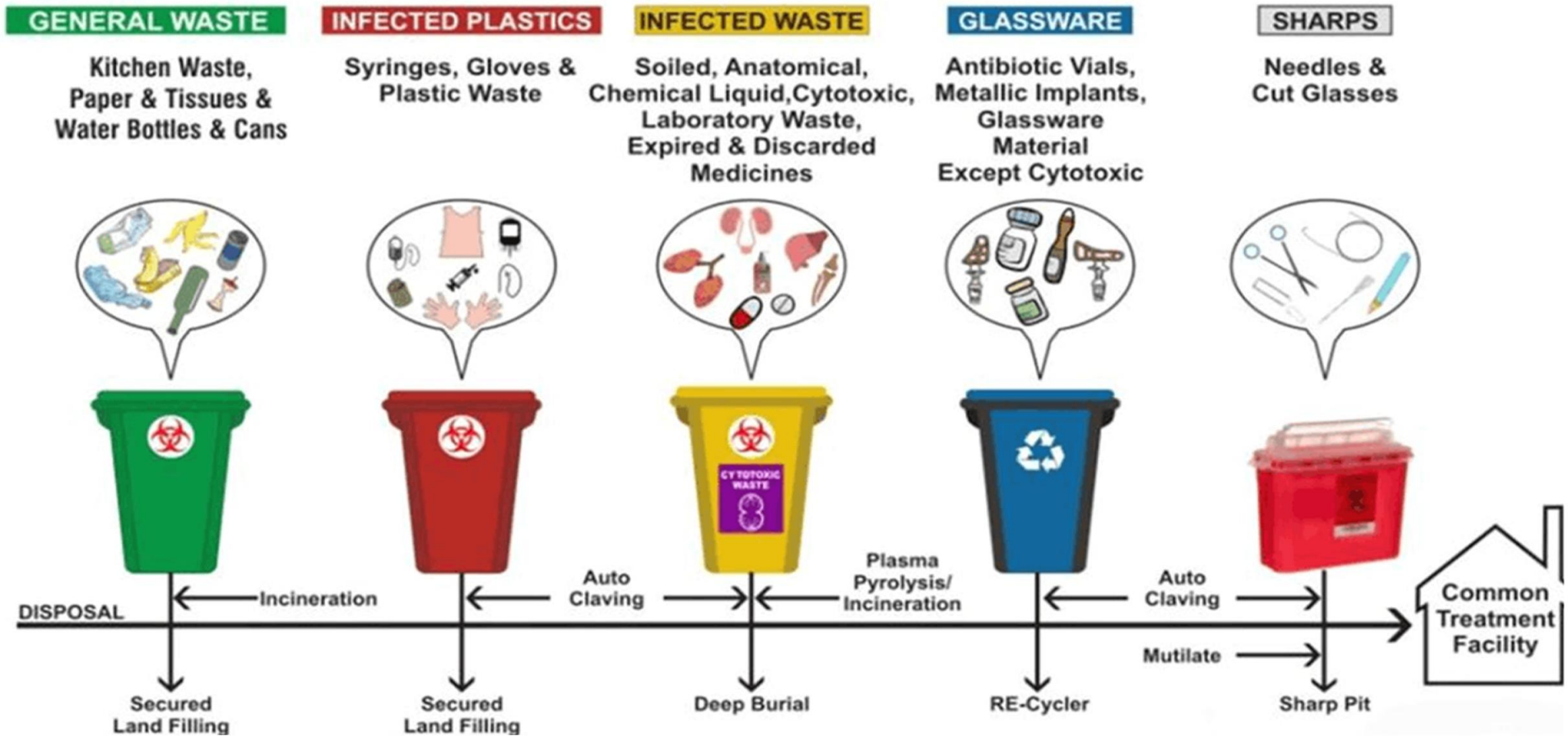
The waste produced during healthcare activities carries a higher potential for infection and injury than any other type of waste.

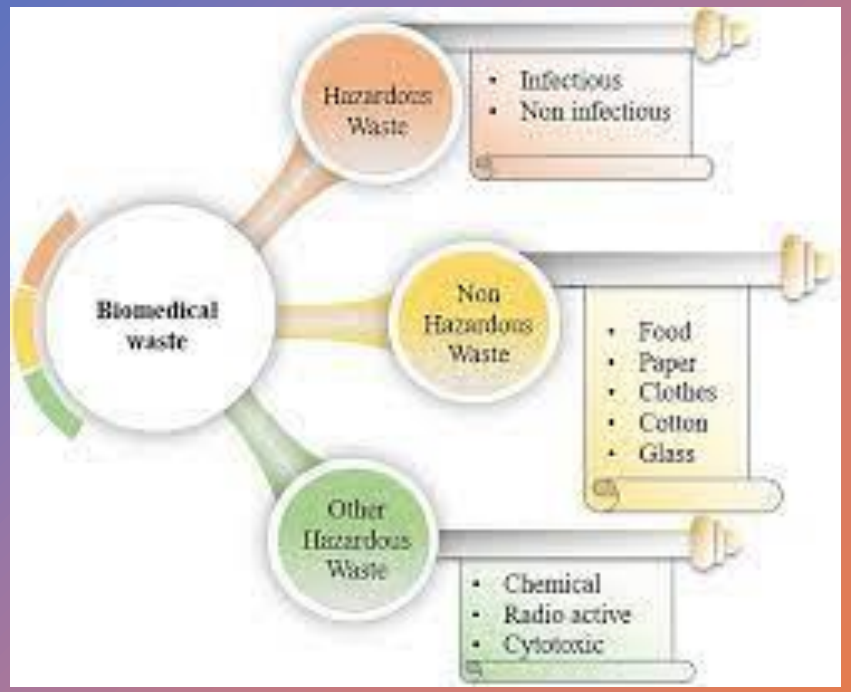
Bio medical waste means any waste, which is generated during diagnosis, treatment or immunization of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps.

Biomedical waste management has recently emerged as an issue of major concern not only to hospitals, nursing home authorities but also to the environment. the bio-medical wastes generated from health care units depend upon many factors such as waste management methods, type of health care units, occupancy of healthcare units, specialization of healthcare units, ratio of reusable items in use, availability of infrastructure and resources etc.

The Govt. of India from time to time revise the Bio- Medical waste management and handling rule to streamline the bio-medical waste management activities and to provide legal action against health care workers and hospital administration who shows non- compliance to the currentRule,2016.

SEGREGATION OF HOSPITAL BIO-MEDICAL WASTE





CLASSIFICATION OF BMW

The World Health Organization (WHO) has classified medical waste into eight categories:

- General Waste
- Pathological
- Radioactive
- Chemical
- Infectious to potentially infectious waste
- Sharps
- Pharmaceuticals
- Pressurized containers

The study aims to check current status of biomedical waste management process in Sadbhavna medical and heart institute, Patiala with latest biomedical waste management rules 2016

Further recommendations can be given based on my study analysis to enhance the bio-medical waste management process in Sadbhavna hospital

By conducting this study, the level of awareness and attitude among health care staff working in Sadbhavna hospital can be evaluated regarding latest biomedical waste management rules 2016 can be evaluated.

- To determine the knowledge and awareness among hospital staff (housekeeping and nursing staff) regarding biomedical waste management policy and practice.
- To assess the attitudes of health care workers about biomedical waste management
- To assess the practices followed by the hospital staff regarding the handling of the bio- medical waste.
- To determine their awareness regarding needle-stick injury and its prevalence among different categories of health care providers.
- To identify the gaps if any and suggestions based on analysis of study for further improvement in bio-medical waste management and handling.

- A major issue related to current Bio-Medical waste management in any hospital is that the implementation of Bio-Waste regulation is unsatisfactory as some hospital staff are disposing the waste in a haphazard, improper, and indiscriminate manner.
- Lack of segregation practices, results in mixing of hospital wastes with general waste making the whole waste stream hazardous.
- Inappropriate segregation ultimately results in an incorrect method of waste disposal.
- The problem of bio-medical waste disposal in the hospitals and other healthcare establishments has become an issue of increasing concern, prompting hospital administration to seek new ways of scientific, safe, and cost-effective management of the waste, and keeping their personnel informed about the advances in this area.
- The need of proper hospital waste management system is of prime importance and is an essential component of quality assurance in hospitals.

Research Methodology

- **Study area**

The study area **was Sadbhavna medical and heart institute, Patiala in Punjab.**

- **Study design**

Descriptive cross-sectional study

- **Duration of study**

2 months from 1st April 2022 to 1st June 202

- **Sample size**

Nursing staff = **44**
House keeping =**25**
Total sampling = 69

- **Sampling technique**

Simple random sampling

Sample selection

The inclusion criteria - nurses and housekeeping staff
The exclusion criteria -Patients and Attendants are excluded. Those who were not available at the time of study and all those who
have not given consent for participation.

Study tools

A checklist was prepared to collect data from the different bio-medical waste generating centres of the hospital.
The checklist has all the essential steps concerning Bio-Medical waste management process.
A structured questionnaire is used for assessing the awareness and knowledge of the heath care personnel.
The questionnaire is prepared in English and regional language.

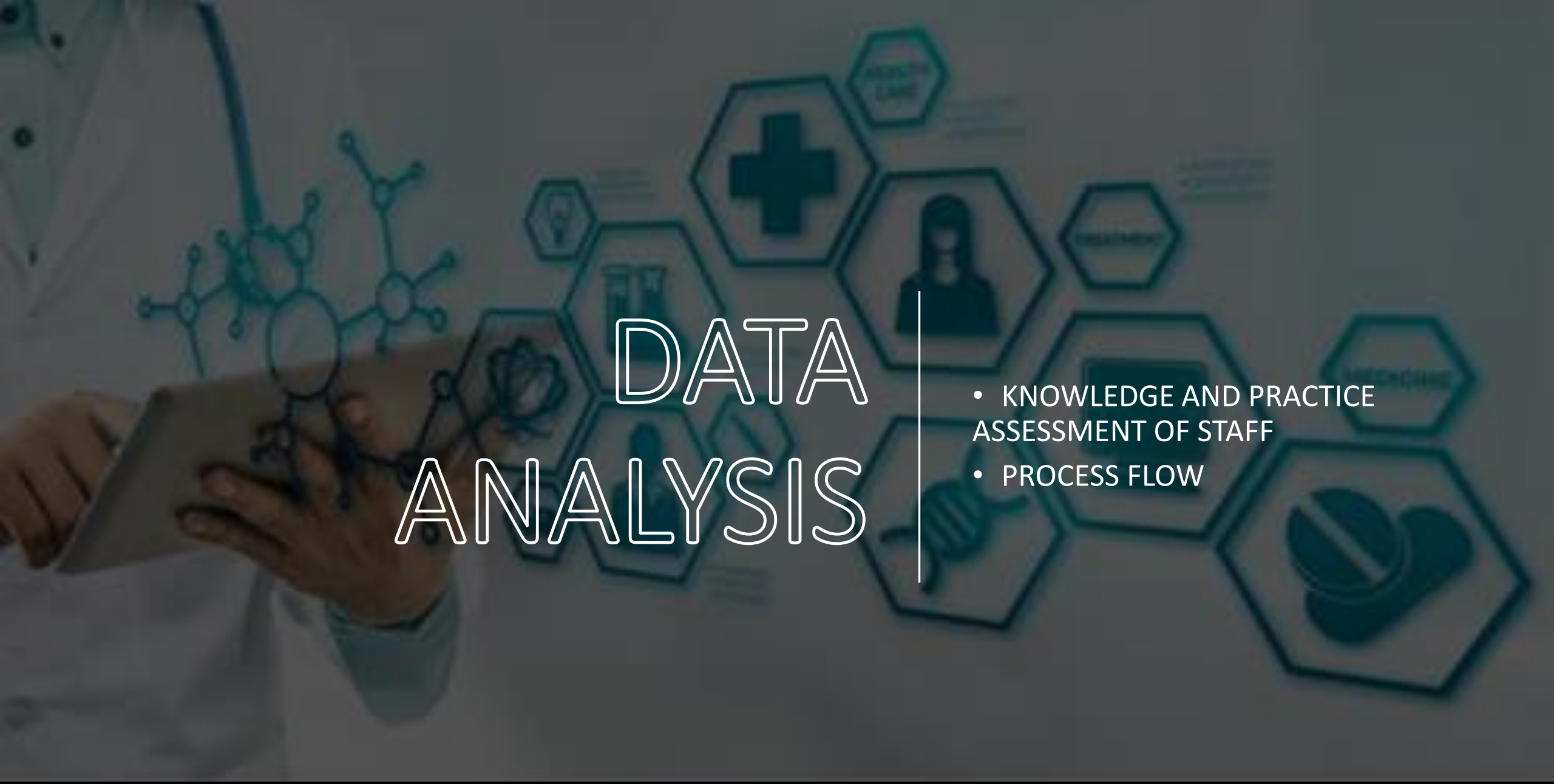
Data collection Method

The data to be collected was of the primary and secondary nature.

- **Primary data**: observing the staff , questionnaire, feedback,review of various activities.
- **Secondary data**: Hospital BMW records, magazines, official websites.

Ethical considerations

The permission for conducting the study was taken from senior medical officer in charge of the hospital. The respondents were explained the purpose of the study and verbal consent is obtained from them prior the interview. All the respondents were assured that their confidentiality will be maintained.



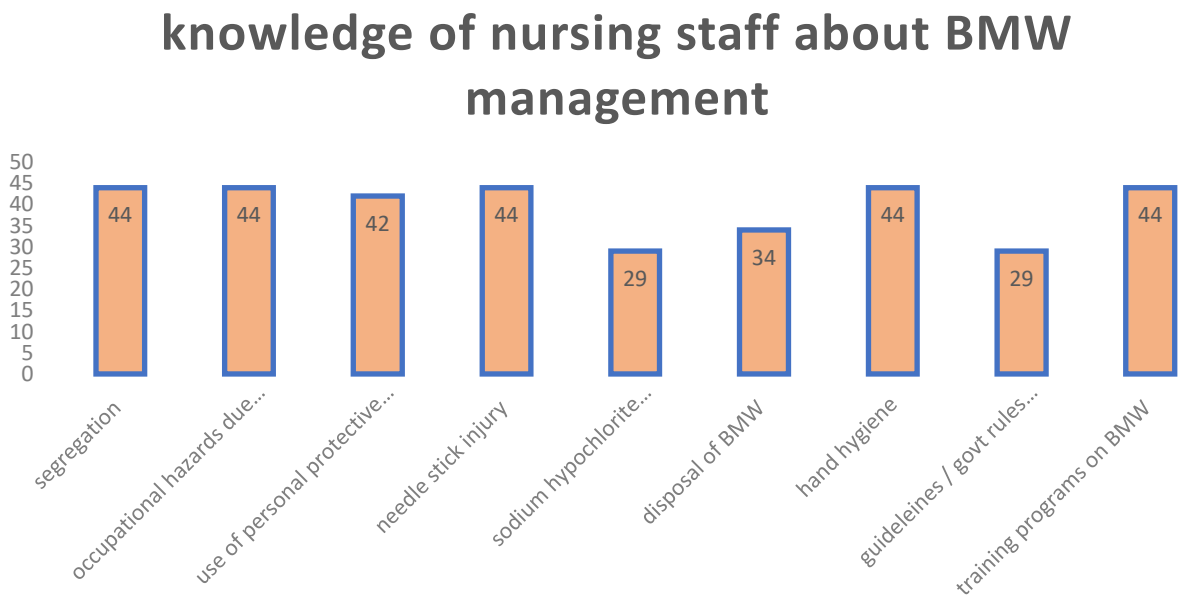
DATA ANALYSIS

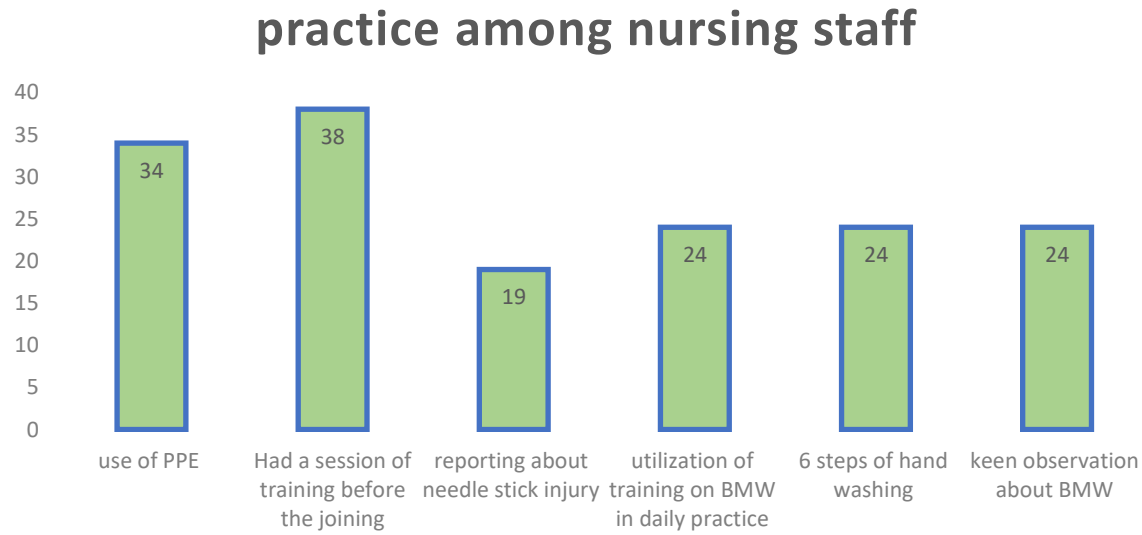
- KNOWLEDGE AND PRACTICE ASSESSMENT OF STAFF
- PROCESS FLOW

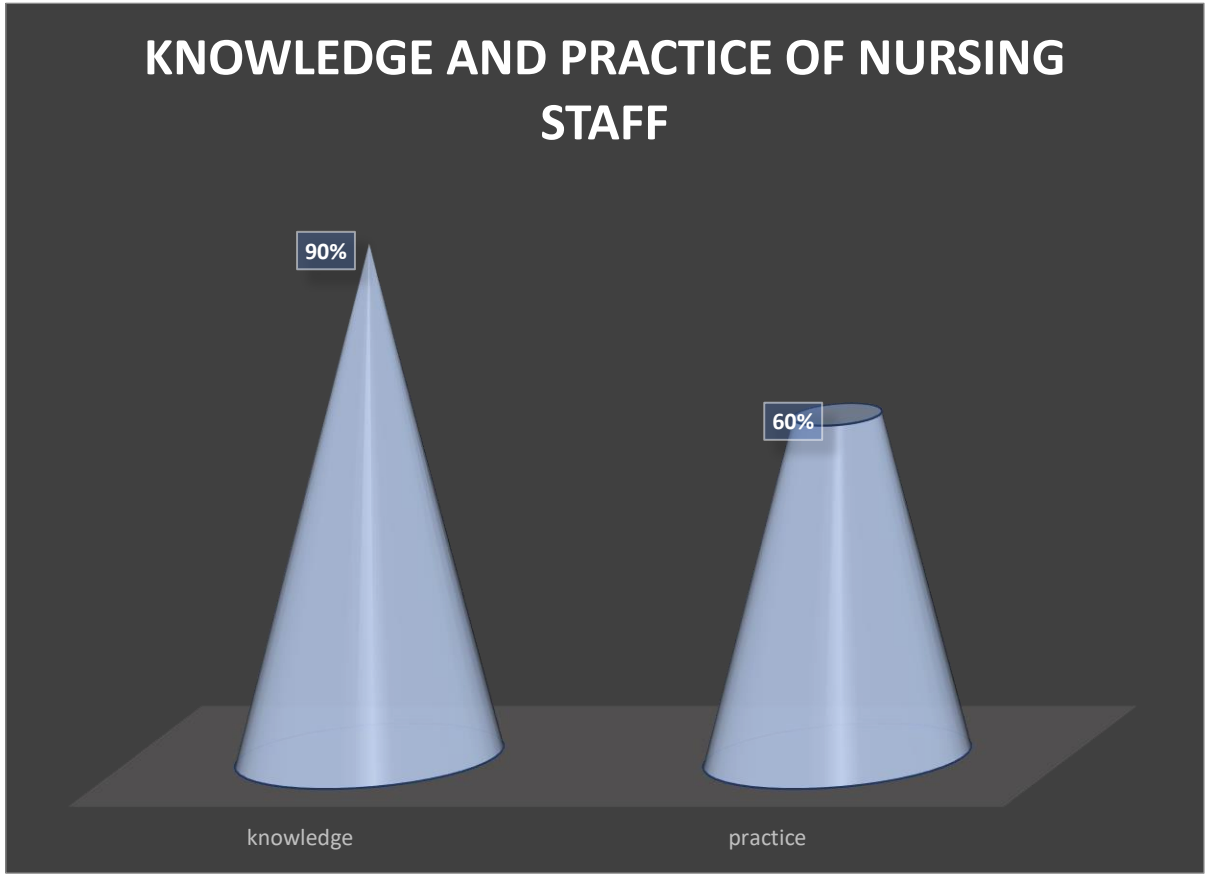
KNOWLEDGE AND PRACTICE ASSESSMENT OF STAFF

- NURSING STAFF
- HOUSEKEEPING STAFF

NURSING STAFF (n= 44)







INTERPRETATION

The nursing staff score 90% in knowledge as they were much more aware than the housekeeping staff. But they need to have more knowledge regarding the hypo solution and should be more aware regarding the government guidelines of biomedical waste management.

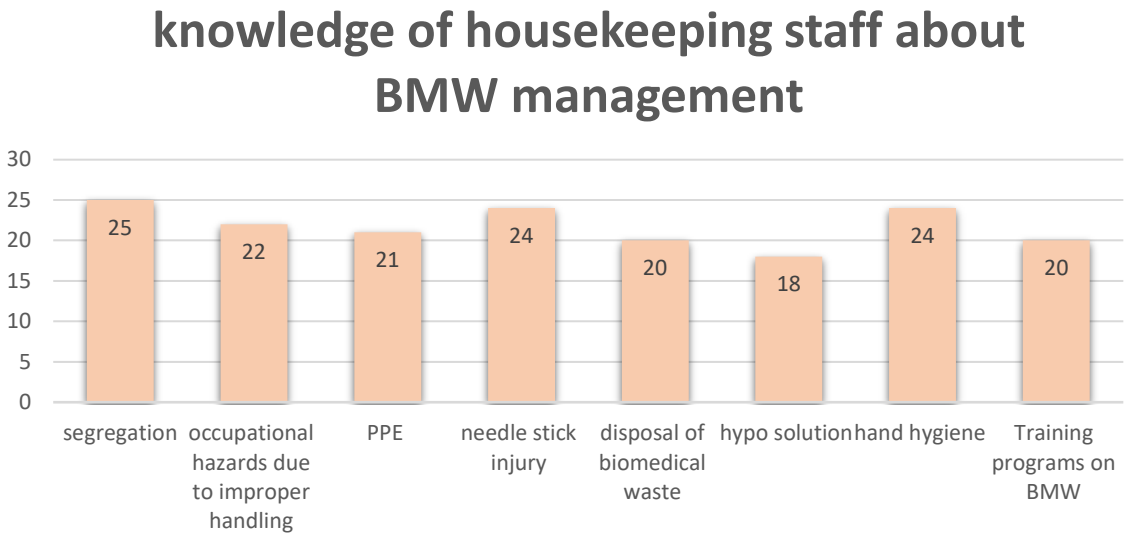
But they score 60% in practice which is lower in comparison with the housekeeping staff.

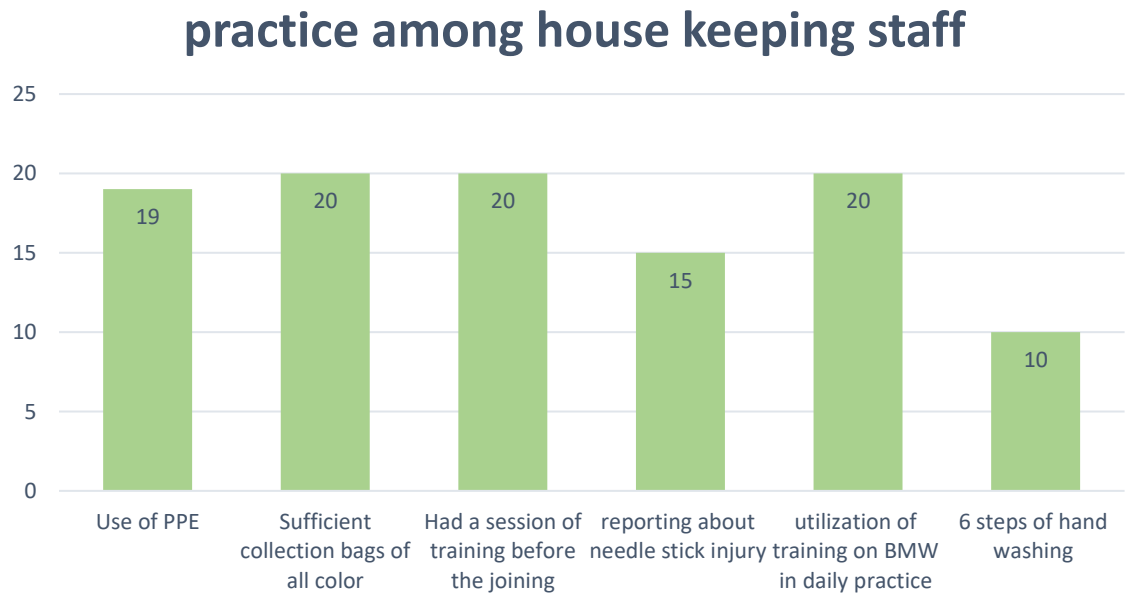
The reason is that many departments do not have needle discarder and they were using plastic boxes to discard the needles. Even the staff not seemed to report about needle stick injury to higher in charge.

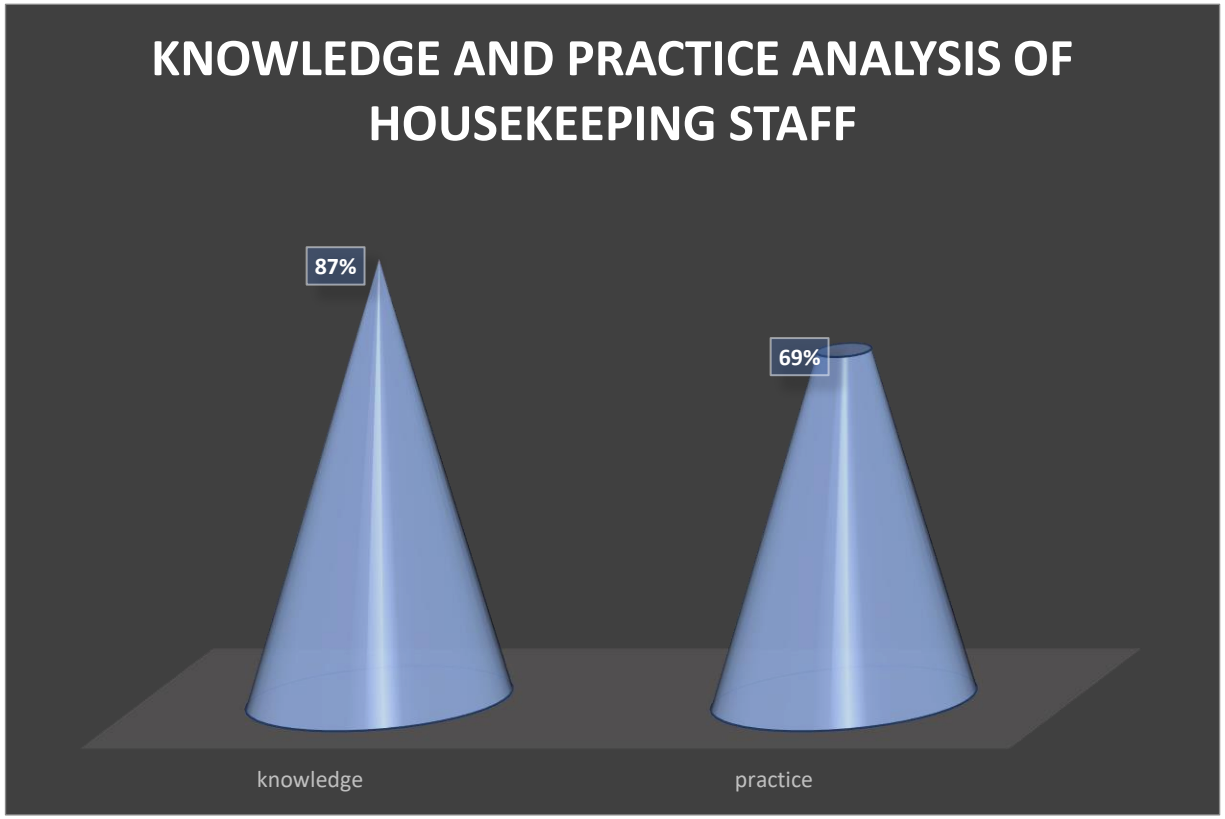
Some of the nursing staff seemed not to do their job seriously by not attending the seminars properly and even by not observing the biomedical waste management keenly.

Also due to not proper BMW management team the nurses were not aware about the general knowledge about the waste collection as only the nursing in-charge is involved in maintaining the registers.

HOUSEKEEPING STAFF (n= 25)







INTERPRETATION

The housekeeping staff score 87% in knowledge which is a good indicator that shows the staff has a good knowledge regarding the bio-medical waste management. But housekeeping staff seemed to have less knowledge regarding the hypo solution (sodium hypochlorite) so proper training is needed regarding this among them.

Somehow, they score less in practice just 69% as they were lagging following the proper precautions needed in the BMW management.

The reason for less score in the practice is that the hospital is not providing sufficient PPE to all the staff due to which they have to sacrifice with their protection.

Like sufficient gloves were not provided so they must share them with their colleagues also they do not have proper mask to cover their face.

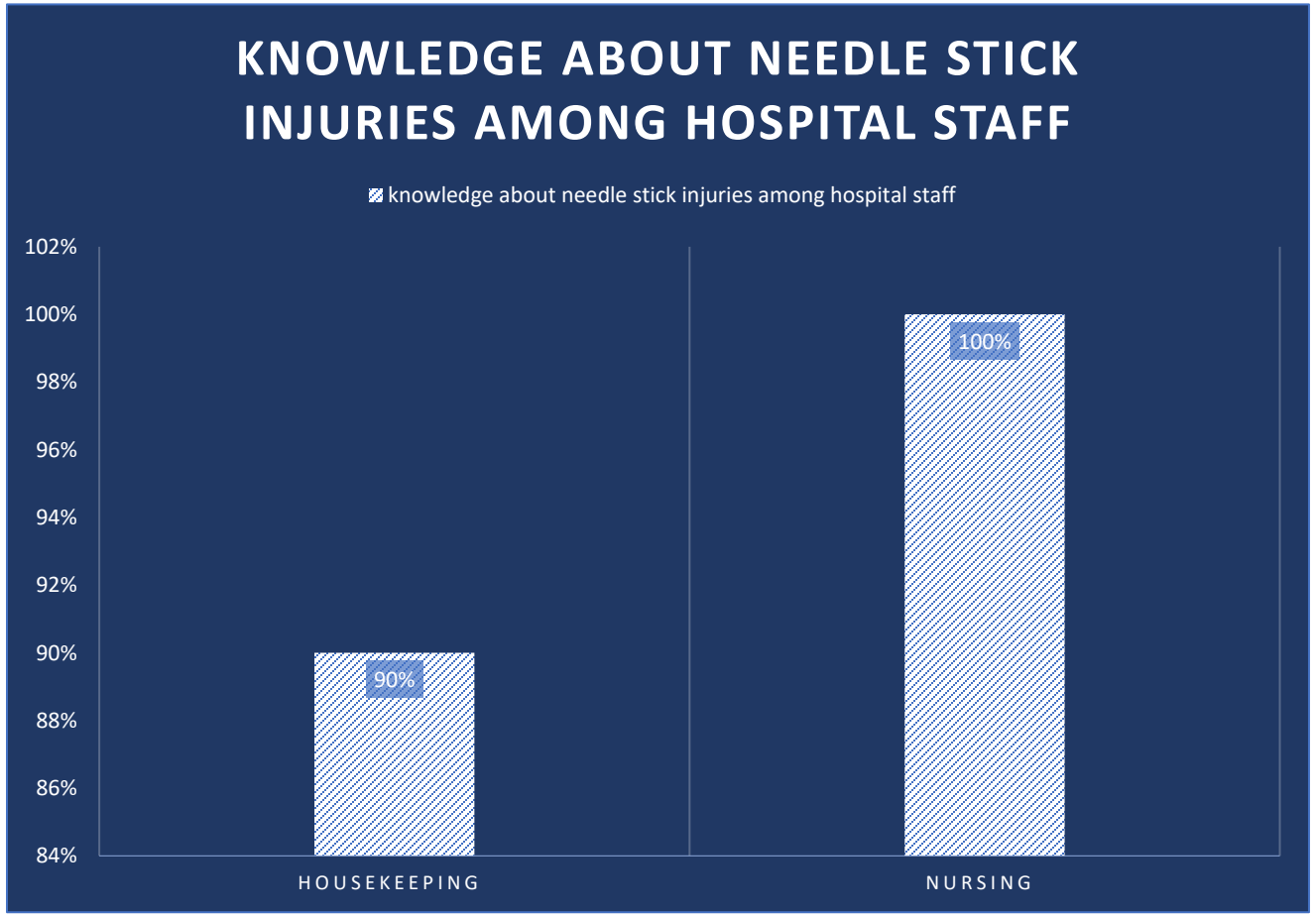
It was seen that very less housekeeping staff was reporting about the needle stick injury to the higher authorities. This may lead to serious health issues.

Also, it was reported that a lot of housekeeping staff was not following the six hand washing steps in daily basis even after they have knowledge regarding that.

KNOWLEDGE ABOUT NEEDLE STICK INJURIES AMONG HOSPITAL STAFF

- **INTERPRETATION**

After the analysis of the data collected through questionnaire, the results showed 100% of nursing staff and 90% of housekeeping staff had proper level of knowledge on needle stick injuries.

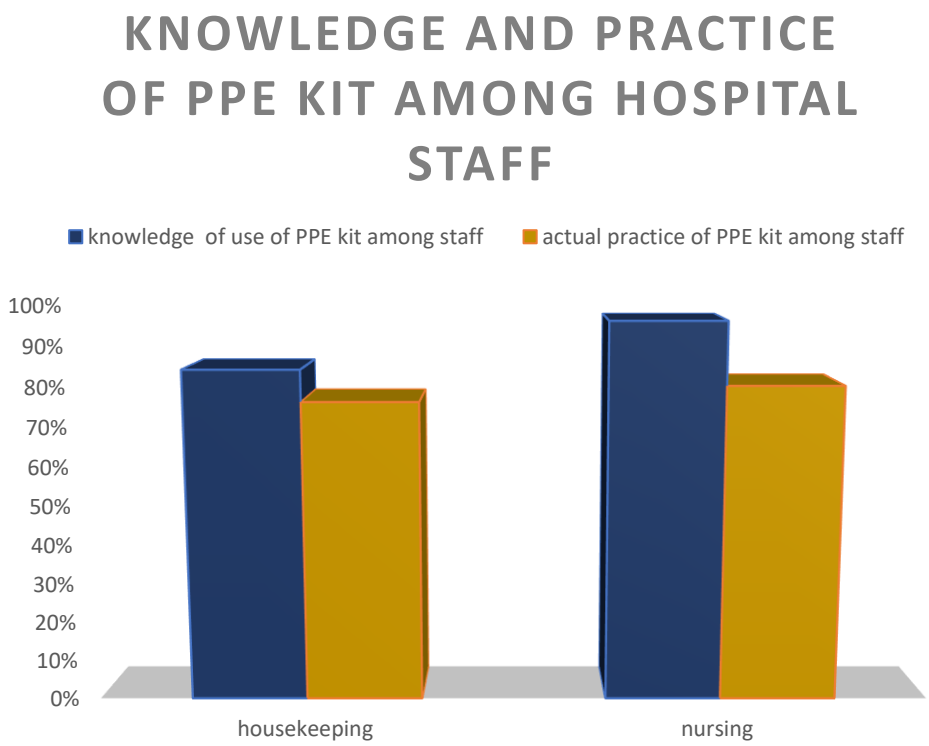


KNOWLEDGE AND PRACTICE OF PPE KIT AMONG HOSPITAL STAFF

- **INTERPRETATION**

After collecting the data, the results showed-

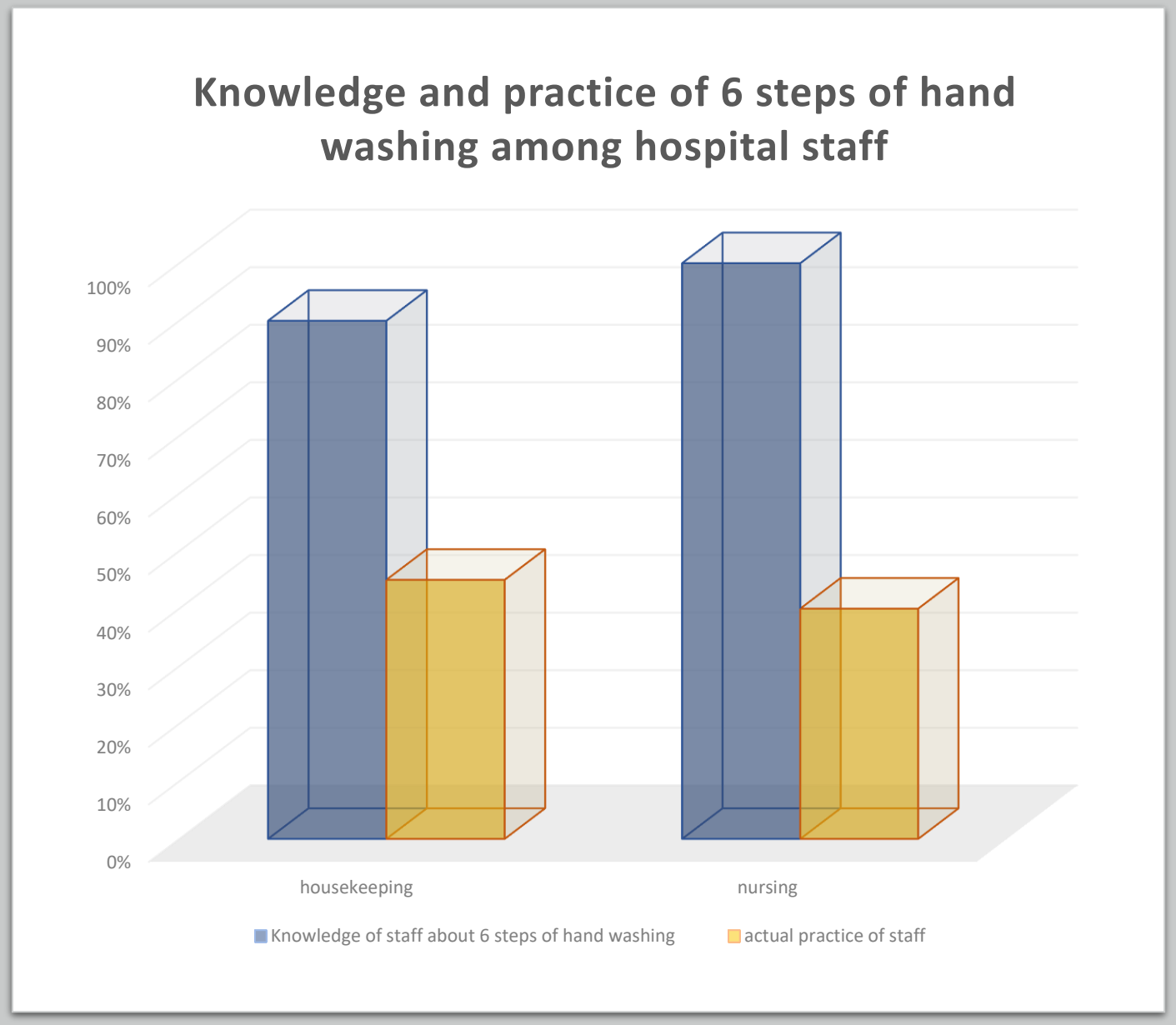
- When the staffs were asked that is personal protective equipment important to be used, 96% of staff nurses, answered it as yes and 84% of housekeeping staff/ sanitary staff answered it as yes.
- But on observation for the use of personal protective equipment the result was as follows 80% of nurses, and 76% of housekeeping were actually using the personal protective equipment.



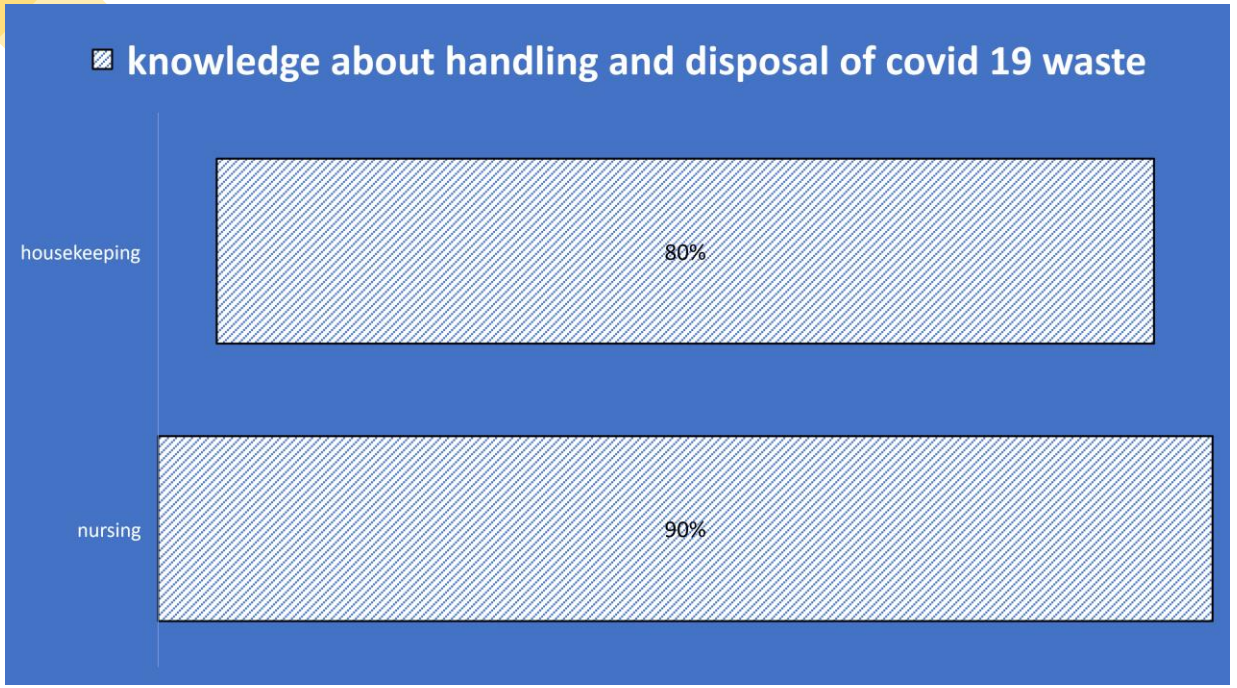
INTERPRETATION

- When the staff was asked that do you follow five moments of hand washing 100% of staff nurses and 90% of housekeeping staff answered yes.
- But on observation,

40% of Staff nurses, and 45% of housekeeping/sanitary staff were following it.

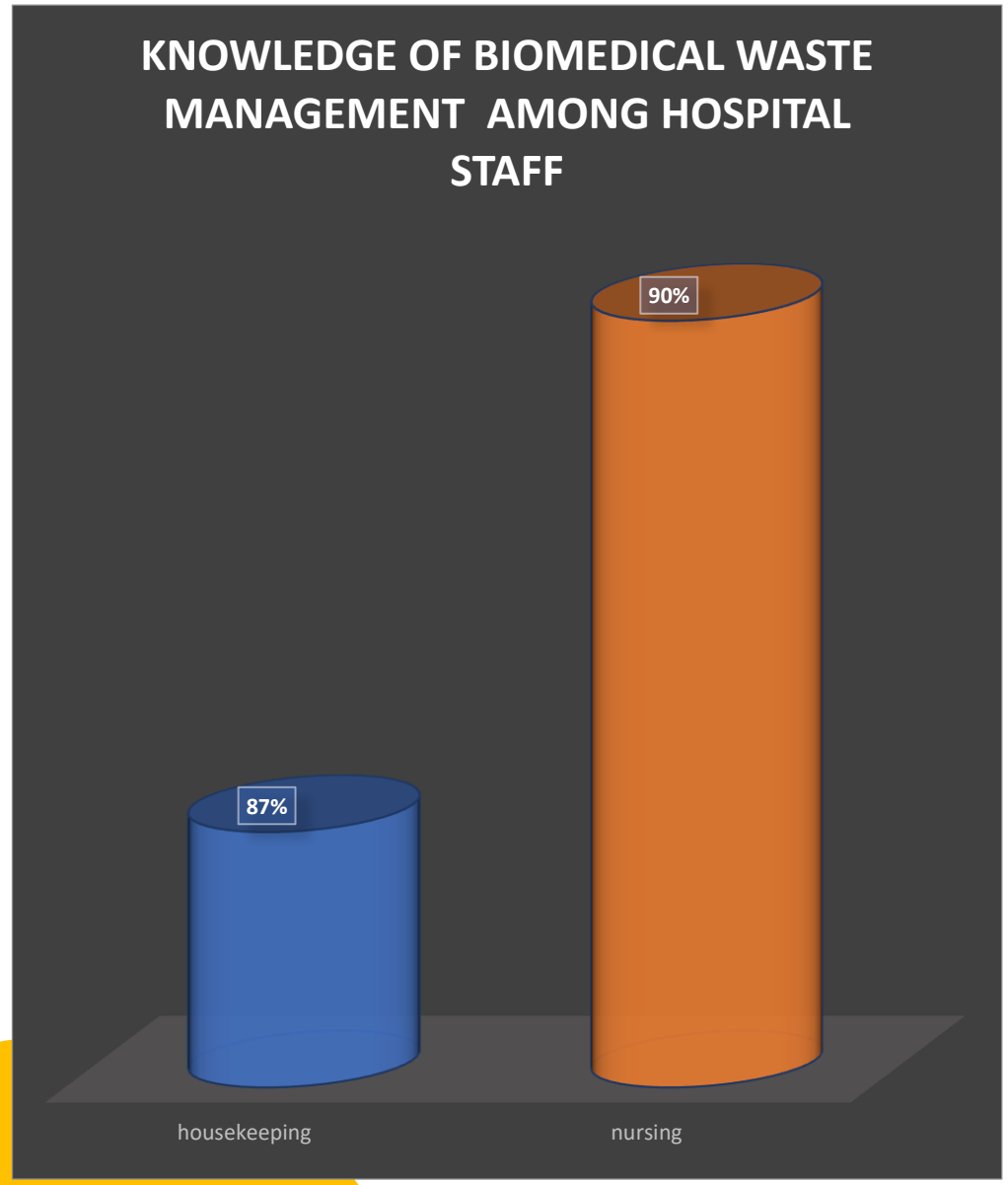


KNOWLEDGE ABOUT HANDLING AND DISPOSAL OF COVID 19 WASTE



INTERPRETATION

After the analysis of the data collected through questionnaire, the results showed 90% of nursing staff and 80% of housekeeping staff had proper level of knowledge about handling and disposal of covid 19 waste.

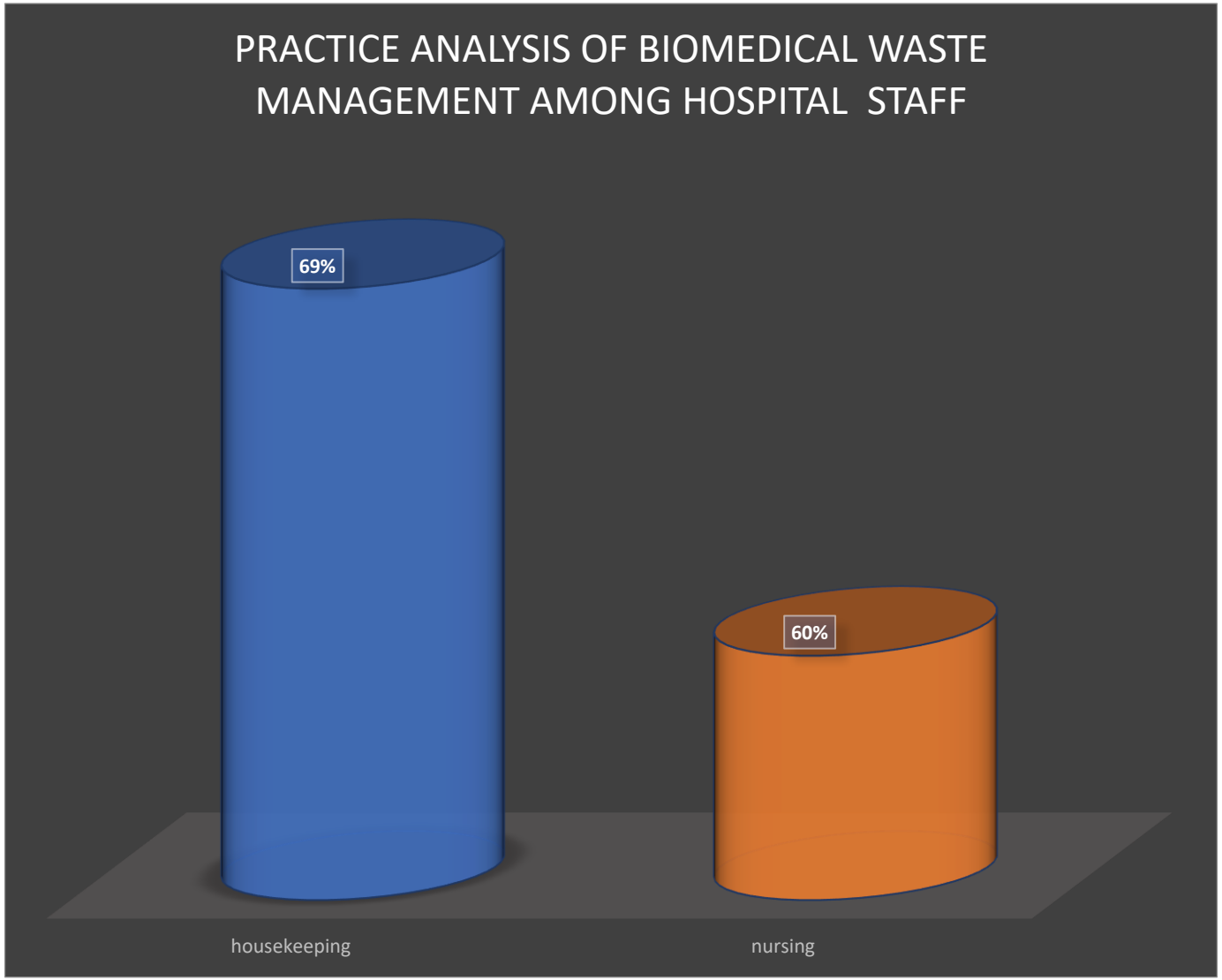


INTERPRETATION

On observing the collected data and the above graphical representation, it is interpreted that nursing staff is having 90% knowledge regarding biomedical waste management whereas housekeeping staff is having 87% knowledge about biomedical waste management. This shows that nursing staff is having more knowledge about biomedical waste management than housekeeping staff.

INTERPRETATION

On observing the collected data and the above graphical representation, it is interpreted that nursing staff score 60% in practice regarding biomedical waste management whereas housekeeping staff score 69% in practice about biomedical waste management. This shows that housekeeping staff is more actively and seriously practice biomedical waste management process than nursing staff.



PROCESS FLOW

BMW is generated in different departments of the hospital.

BMW is segregated at the point of generation at source in separate colour coded bins containing non – chlorinated plastic bags containing bar codes in compliance with most of the rules of 2016

The authority segregates the liquid chemical waste at the point of source and pre- treat it with sodium hypochlorite before mixing it with other effluents generated from health care facilities.

Waste is then transported by waste handlers in closed wheelbarrow trolley to the collection centre in the hospital located away from the wards and the waste is collected 2 times in a day but there is no separate route for waste transport.

Collection room has well ventilation and provided with lock security for preventing pilferage of recyclables.

Transportation from storage centre in hospital to outsourced agency. Waste is transported to Ludhiana.

- **SEGREGATION**

- **COLLECTION**

- **STORAGE**

- **TRANSPORTATION**

RECOMMENDATIONS

- ✓ There are no lags in the process flow for biomedical waste management process which make it more compliant with the rules.
- ✓ The housekeeping staff should wear PPEs, which was lacking in the observations.
- ✓ Special training regarding importance of segregation of waste at the source is important.
- ✓ Since the analysis shows a lower percentage in practices for both housekeeping and nursing staff, the hospital can formulate a team for auditing compliances, which would be responsible for entire supervision of all practices under BMW Management.
- ✓ A protocol should be set for the proper recording of the needle stick injury and improve its reporting on the staff behalf.
- ✓ There is a need of strict implementation of guidelines of biomedical waste management and regular supervision and monitoring by a separate committee, exclusively formed for the implementation of rules related to the safe management and handling of hospital waste.


Thank
You