

A Study On Knowledge, Attitude & Practice Of Healthcare Workers Towards Infection Control Prevention At The Mission Hospital

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INTRODUCTION

Infection prevention is a systematic effort or process of placing barrier between vulnerable host and the microorganisms.

In tertiary care settings, the most important source of spread of these infections is through the contaminated hands of the health care givers: doctors, nurses and other staffs and patients come in contact with a wide range of healthcare professionals.

As per the WHO, 7.1 million instances of HAI happen each year. One out of each 20 individuals suffers from nosocomial infection. This leads to 99,000 cases of death every year. HAIs aggravate the patient's general health status, leading to extra prescription of antibiotics, resulting in inflated costs for patients and also the healthcare system, in addition to antibiotic resistance. It has been estimated that the prevalence of HCAI in developed and developing countries is 7.6% and 10.1% respectively.

Hospital Associated Infection

Hospital Associated Infection is “An infection occurring in a patient during the process of care in a hospital or other healthcare facility which was not present or incubating at the time of admission.

Types of HAI we seen in hospital are-

- Ventilator Associated Pneumonia
- Catheter Associated Urinary Tract Infection
- Central Line Associated Blood Stream Infection
- Surgical Site Infection



Personal Protective Equipment

‘Personal Protective Equipment’ consists of aprons, gloves, masks, caps, goggles and boots. The primary use of PPE is to protect staff and reduce opportunities for transmission of micro-organisms.

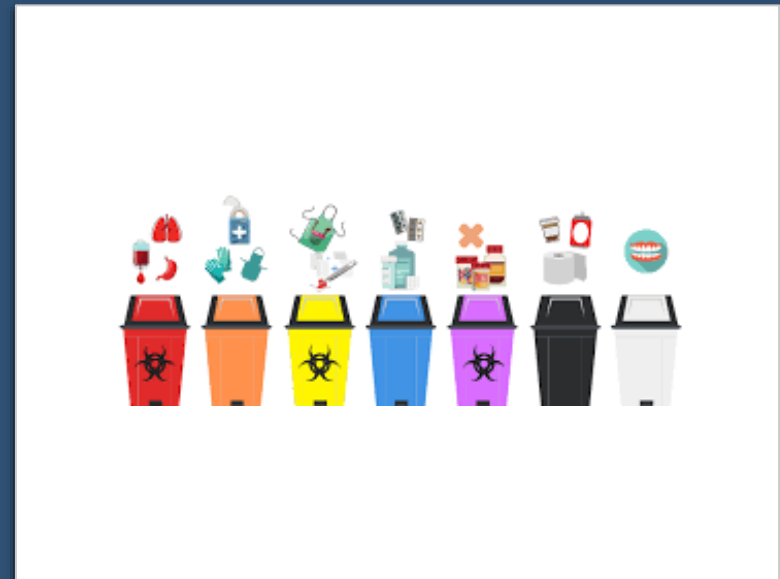
Hand Hygiene

Hand washing is the vigorous rubbing together of lathered hands for at least 40 to 60 seconds, followed by thorough rinsing under a stream of clean water. To remove transient microbial contamination acquired by recent contact with infected or colonized patients or environmental sources. To prevent the transmission of potentially pathogenic organisms hand hygiene should be followed.



Biomedical Waste Management

Hospitals generate enormous amounts of wastes. So to prevent the risk of injury or contamination from contaminated hospital waste to the patients, healthcare workers and the public waste management is done. Effective disposal of the large quantity of waste is best done by dividing the waste into categories and using different methods of disposal for the various categories. Color coded plastic bags should be used for each type of waste.



REVIEW OF LITERAURE

Difference in knowledge of the participants due to their educational level.

Participants are aware of infection control practices but less number of them actually practice that.

Older age, lengthy work experience associated with knowledge, attitude and practice of infection prevention.

Emphasis should be placed on student learning about he ICM and importance on teaching these topics correctly in the first cycle so as not to forget the basics knowledge of bio safety and management of infection control in the future.

Doctors have better KAP than other healthcare workers.

Implementation of the policies and guidelines was the issue.

In some cases awareness is good but practice is poor.

Practice of hand hygiene among students from the private institution was better compared to those from public institution.

There is no correlation between practice and attitude of infection control prevention.

RESEARCH QUESTION

- How aware are the Operation Theater staff regarding Infection Control Practices at The Mission Hospital, Durgapur?

RESEARCH OBJECTIVE

- To assess knowledge, attitude and practice of OT staff regarding infection control practices at The Mission Hospital.
- To identify the lacunae in infection control practices.
- To suggest measures to reduce these gaps.

METHODOLOGY

- **Study Design-** Hospital based Cross-sectional study
- **Study area-** Operation Theaters of The Mission Hospital, Durgapur, West Bengal
- **Study tool-** Pre-tested self-administered structured questionnaire
- **Study period-** 3 months (March22 to June21, 2021)
- **Sampling technique-** Convenient sampling
- **Sample size-** The total number of staff in OT was 120 out of which 83 responses were collected (69%).
- **Inclusion criteria** – Surgeon, nurse, technician and anesthesiologist of OT.
Staff that are willing to take part in the research.
- **Exclusion criteria-** General Duty Assistant, housekeeping and all the staff other than OT.

Steps taken to conduct the study-

- The infection control practices were observed and the ICM policies in the organization reviewed.
- Factors were decided based on literature review and discussion with the senior staff and infection control department.
- Pre-tested self-administered structured questionnaire which had four sections to assess four specific domain of ICMs with 20 items about the concept of hand hygiene (4 items), PPE (6 items), BMW (3 items) and HAI (7 items).
- Collection of the lists of the staff in the operation theater.
- Explaining the respondents about the survey.
- In MS Excel, data was recorded for each question statement for each respondent..
- Cause and effect analysis was done to know the potential factors that causing the gaps.

The workers were classified into the following groups based on their knowledge and practice-

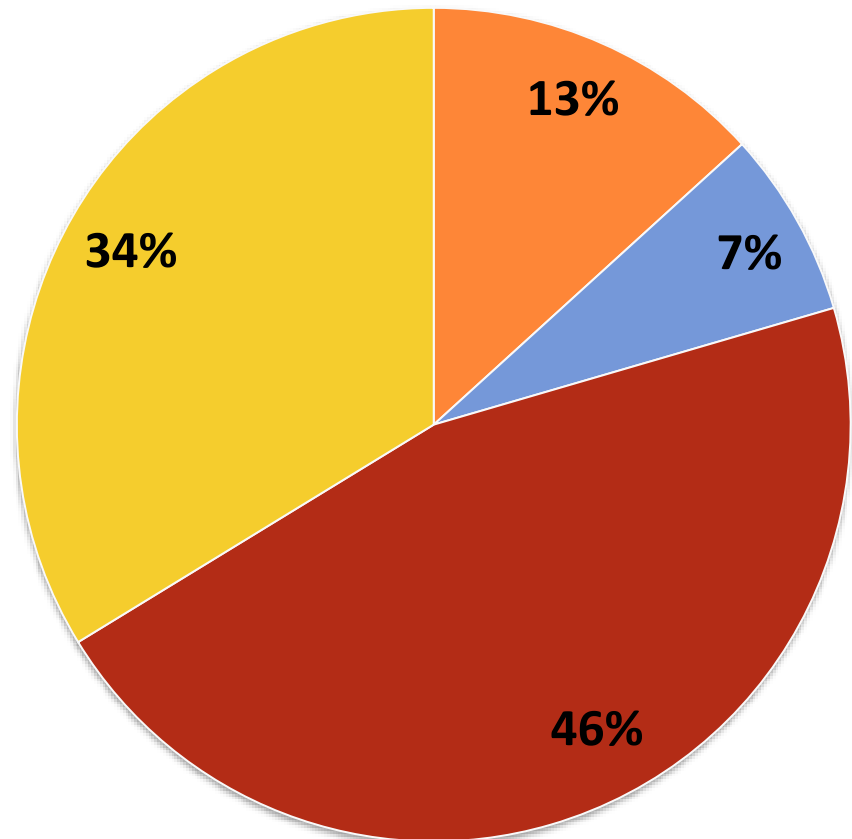
Knowledge & practice level	Category
Excellent	70% and above
Good	50-69%
Poor	30-49%
Very poor	Below 30%

RESULT

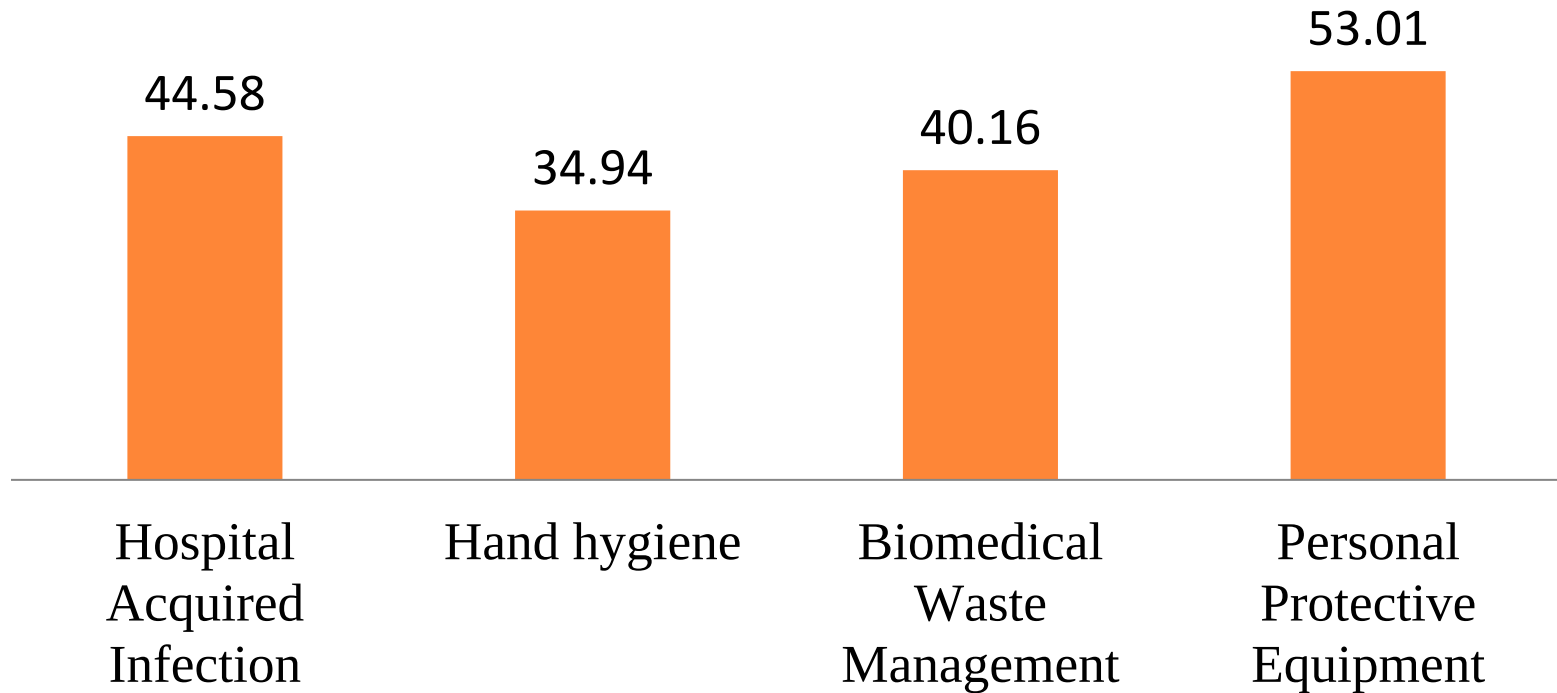
Percentage distribution of the study participants

Respondents participated (n=83)

- Surgeons
- Anesthesiologist
- Nurse
- Technician

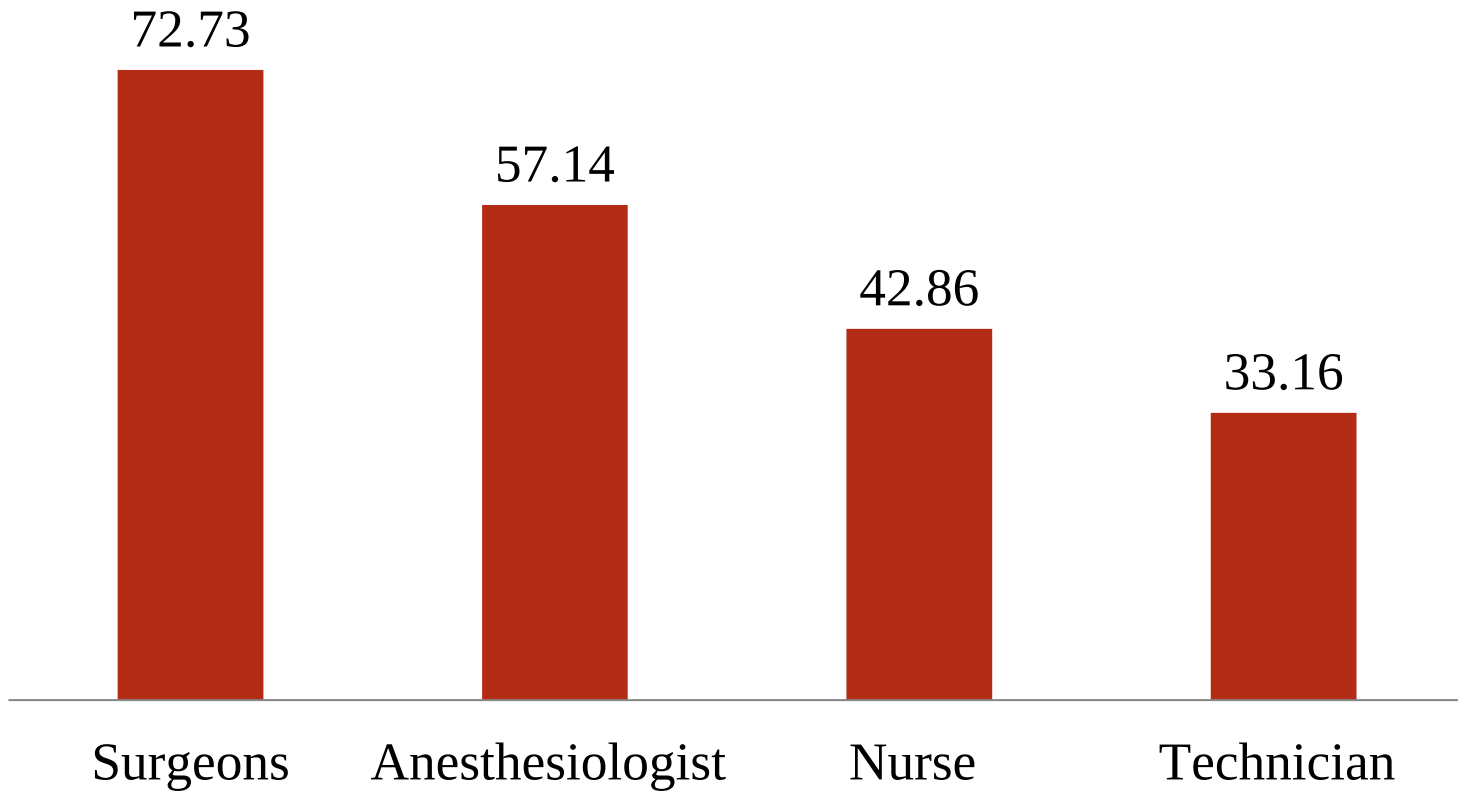


Knowledge and practice of the staff



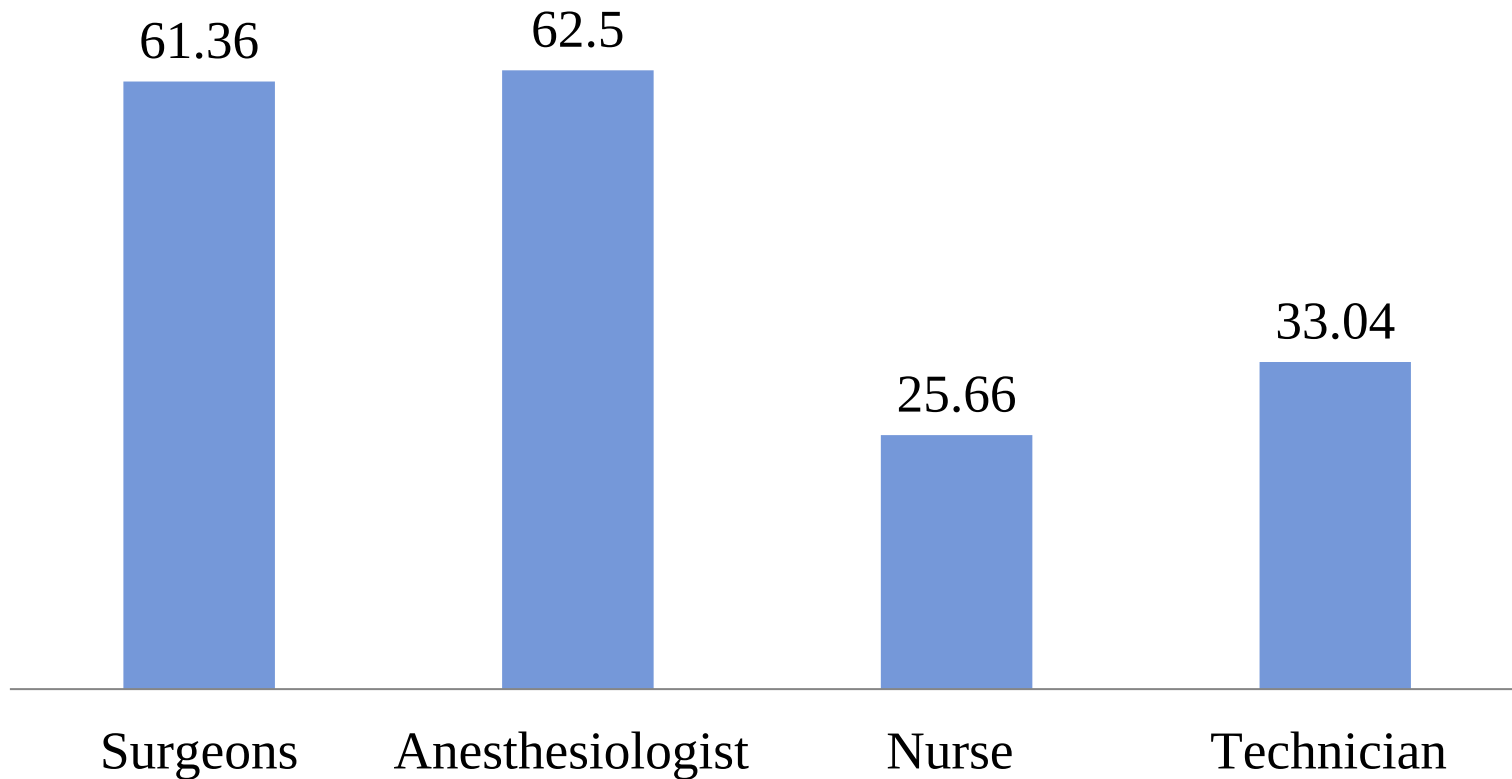
Overall knowledge and practice among the respondents in the four domains (n=83)

Hospital Acquired Infection



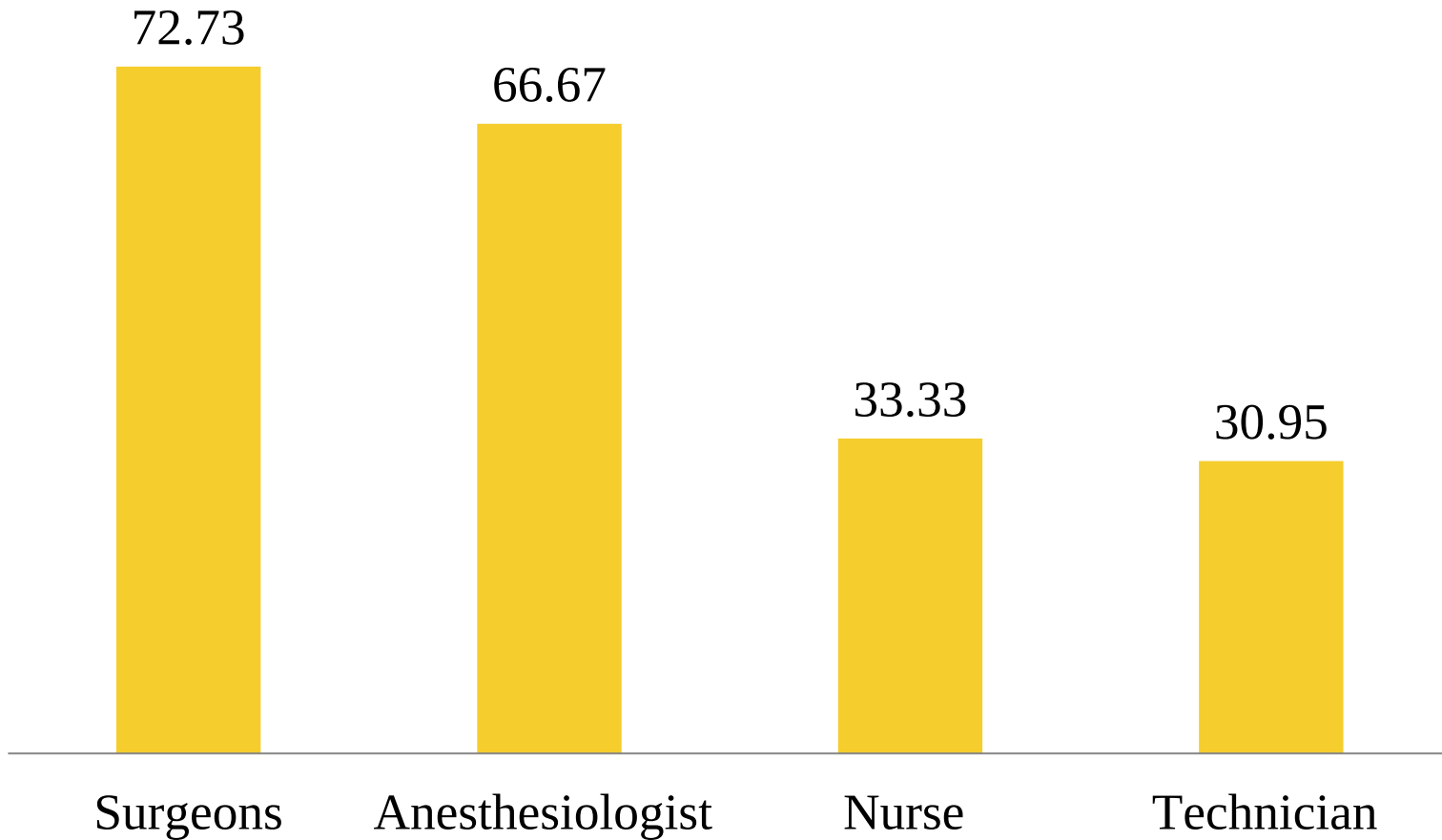
Percentage distribution of health care personnel who answered the questions correctly under hospital acquired infections (n=83)

Hand hygiene



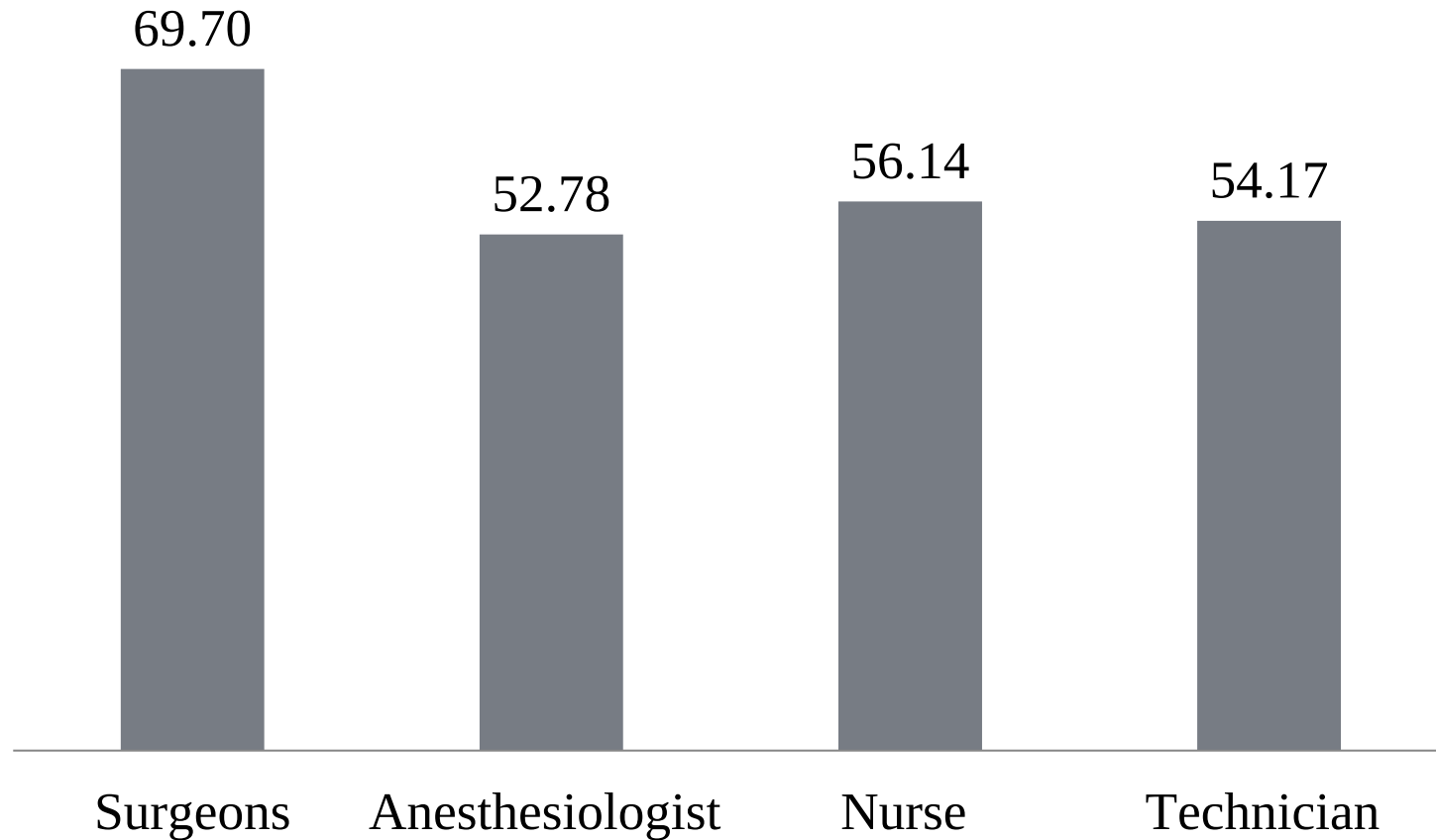
Percentage distribution of respondents who answered the questions correctly under knowledge and practice of hand hygiene (n=83)

Biomedical Waste Management



Percentage distribution of respondents who answered the questions correctly under disposal of biomedical waste management (n=83)

Personal Protective Equipment



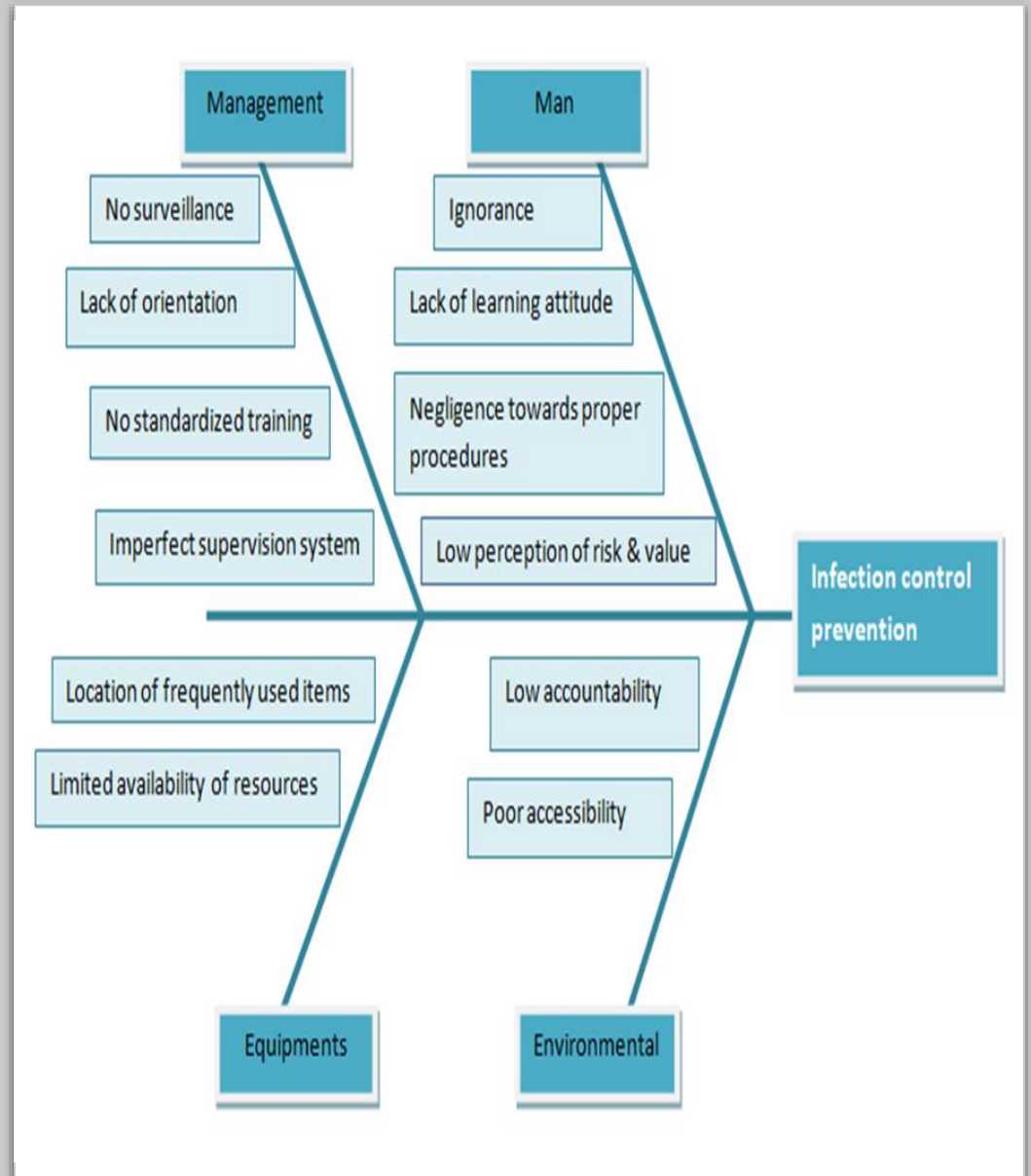
Percentage distribution of respondents who answered the questions correctly under use of personal protective equipments (n=83)

Attitude of the staff

Attitude	Strongly agree	Agree	Indifferent	Disagree	Strongly disagree
hospital staff should be provided with regular training	86%	7%	6%	0%	1%
Infection control precautions help in reducing the occupational hazards , related to you and the patients	74%	17%	2%	7%	0%
Infection control precautions are not really important in hospital	3%	6%	0%	24%	68%
Infection control precautions are mainly related to the critical areas of the hospital	43%	16%	5%	25%	11%

DISCUSSION

Cause and affect diagram of low knowledge, attitude and practice of infection control prevention among respondents



RECOMMENDATION

Training and education is recommended for staffs. Information on the following topics should be included:

- Hand hygiene methods
- Proper use of personal protective equipments
- Use of aseptic techniques for all procedures
- Different types of Isolation practices
- Preventive measures for HAI
- Infection surveillance
- Modes of transmission for pathogenic bacteria, blood borne viruses, and other microorganisms
- Prevention and management of vacciable diseases
- Biomedical waste segregation & disposal.
- Management of blood and body fluid exposure including sharp injuries.
- Reprocessing of reusable instruments including washing and sterilization methods
- Infection control procedures for initiation, care, and maintenance of access sites and active housekeeping staff to prevent microorganism transmission, including suitable methods.
- Equipment and environmental surfaces must be cleaned and disinfected.

- Carrying out random surveillance.
- Implementation of infection control policies and procedures
- Ensures that HCW adhere to the Hospital Employee Health Program.
- Representatives from the hospital's various components/functions work together to implement the infection control programme.
- Leaders at the hospital make sure that the infection control programme has enough resources.
- Procurement of the equipments and materials required for the infection control prevention.
- Proper orientation of the new staff entered in the hospital to make them aware regarding infection control practices of the hospital.
- Use of the information, education and communication material as intervention for dissemination of knowledge and positively modifying attitude and behavior.
- Availability of hand wash and PPEs whenever and wherever is required.
- Onspot demonstration should be given whenever the staff found doing false practices.
- Corrective and preventive action to eliminate the cause of non-conformities and to prevent recurrence of the non-conformities.

HOW TO HANDRUB?

with 70% alcohol+0.5% CHG* solution

1a



Apply a palmful of the product in a cupped hand and cover all surfaces

1b



2



Rub hands palm to palm

3



Right palm over left dorsum with interlaced fingers and vice versa

4



Palm to palm with fingers interlaced

5



Back of fingers to opposing palms with fingers interlocked



Rotational rubbing of left thumb clasped in right palm and vice versa



Rub tips of fingers in opposite palm in a circular motion



Rotational rubbing towards the wrist

20-30 sec



..... once dry, your hands are safe

HOW TO HANDWASH?

with 4% CHG* solution + water



Wet hands with water



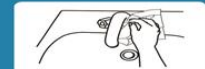
Apply enough soap to cover all hand surfaces



Rinse hands with water



Dry thoroughly with a single use towel

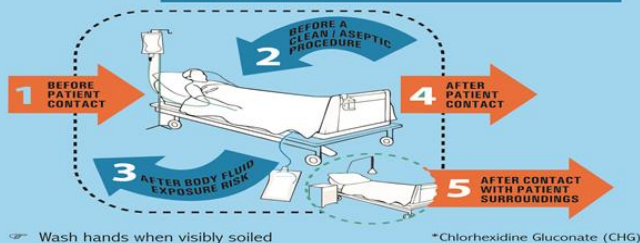


Use towel to turn off faucet



..... and your hands are safe

YOUR 5 MOMENTS FOR HAND HYGIENE



Wash hands when visibly soiled

*Chlorhexidine Gluconate (CHG)

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- BODY PARTS
- HUMAN TISSUES
- SURGICAL WASTE
- BLOOD BAGS
- SOLID PLASTER
- COTTON WASTE
- EXPIRED MEDICINES
- CYTOTOXIC DRUGS
- PLACENTA
- SPECIMENS
- BANDAGES
- DRESSINGS
- CASTS
- LINEN/BEDDING
- IV TUBINGS
- SYRINGES
- VACUTAINERS
- CATHETERS
- GLOVES
- ANY OTHER TUBINGS
- SALINE BOTTLES
- URINE BAGS
- STENTS
- APRONS

- BLADES
- SCALPELS
- LANCETS
- SOLID NEEDLE (STYLET)
- SHARP OBJECTS

- BROKEN GLASSES
- VIALS / AMPOULES
- SLIDES
- METALLIC IMPLANTS
- GLASS BOTTLES EXCLUDING CYTOTOXIC RESIDUE



CLINICAL WASTE



PLASTIC WASTE



SHARP WASTE



GLASS WASTE



WASTE CAN BE HAZARDOUS. HANDLE WITH CARE.

CONCLUSION

- Knowledge & practice regarding the use of PPE is high.
- Surgeons and anesthesiologists had adequate knowledge about infection control measures.
- Factors like advanced age, educational status, serving year, taking training and adherence on infection prevention associated with knowledge and practice of infection prevention.
- Need for improvement of infection control measures among nurses and technicians for both self and patient's protection.
- Update the knowledge, attitude and practice with pre-service or in-service training, fulfilling necessary infection prevention supplies, developing of professionals educational level, introducing healthcare workers infection prevention standard of practice and continuous mentorship/supervision to improve HCWs adherence ICM.
- Training on correct hand washing, PPE delivery techniques, and safe disposal of biologically hazardous wastes, as well as inspection of trainees' behaviors by trainers to measure their degree of competency against minimum acceptable levels.
- Sustained implementation, regular monitoring and assessment is necessary.

THANK YOU

