

A Study on Knowledge and Practices to Reduce Hospital Acquired Infection: Pre and Post Test Analysis



Presented by:

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Organization Profile

SRS Sunflag Hospital, Faridabad (Haryana)

- VISION: Aim of providing comprehensive medical resources under one roof, while maintaining the highest standards of excellence.



Introduction

- Nosocomial or Hospital Acquired Infections are a major health problem in hospitals throughout the world. At least 5% of patients entering hospitals will develop a nosocomial infection. Nosocomial infections represent a leading cause of death. Nosocomial infections, such as bacteria, surgical wound infection, pneumonia and urinary tract infection, are also associated with major morbidity in hospitalized patients. These nosocomial infections add significantly to the expected length of stay for patients.

According to NABH standard 5th chapter that covers Hospital infection control (HIC)

Some of the measurable elements of the standard has been included in this project:

- The hospital infection control program is documented which aims at preventing and reducing risk of Nosocomial infections.
- The hospital has a multi-disciplinary infection control committee.

- The hospital has an infection control team
- The hospital has designated and qualified infection control nurse(s) for this activity.
- Hand washing facilities in all patient care areas are accessible to healthcare providers.
- Compliance with proper hand washing is monitored regularly.
- Isolation/barrier nursing facilities are available.

- Adequate gloves, masks, soaps and disinfectants are available and use correctly.
- The hospital is authorized by prescribed authority for the management and handling of Bio-Medical waste.
- Proper segregation and collection of Bio-Medical Waste from all patient care areas of the hospital is implemented and monitored.
- Appropriate personal protective measures are used by all categories of staff handling Bio-Medical Waste.
- It also conducts regular “in-Service” training sessions for all concerned categories of staff at least once in a year.

The following aspects of infection prevention and control will be included in this project:

- Hand Hygiene/hand washing
- Personal Protective equipment.
- Cleaning
- Training and education of nursing and housekeeping staff.

Rationale

- Each year infections associated with healthcare occur in a large number of patients, making healthcare associated infection (HAI) the most common complication affecting patients in hospitals. These infections have a number of adverse effects for both patients and the hospital.

For the Patient

- The Risk of life-long disabilities or even death
- The Possible need for stronger and more expensive medications, with the added risk of complications
- Prolonged hospital stay

For the Hospital

- Significant resource costs
- The need for more comprehensive quarantine/isolation procedures
- More work for healthcare staff (such as the use of laboratory tests and other tools to diagnose the infection)
- Prolonged hospital stays, which increase the cost of admission and reduce the beds available for new admissions.

SRS Sunflag Hospital's annual report quotes 10.6% cases developed Hospital Infection in year 2015.

- 5 to 10 % Patients admitted to hospitals get acquired infections.
- 2 million patients per year.
- 25 % of Nosocomial Infections occur in ICU.
- 90000 People die every year.
- In 70 percent cases infection is due to antibiotic resistant organisms.

Incidence of HAI vs. Cost

Hospital acquired Infection	Incidence	Additional cost
Urinary Tract	45%	13%
Surgical Wound	29%	42 %
Pneumonia	9 %	39%
Blood Stream	2%	4 %

Source: Haley, 2010

Aim: To reduce Hospital Acquired Infection in SRS Hospital, Faridabad.

Objectives:

- To develop and administer a Knowledge and Practices survey on Infection Prevention and Control among the staff of SRS Hospital Faridabad.
- To Measure the adherence of infection, prevention and control standards and protocols in the ICU.
- To motivate the staff in ICU and IPD to follow infection prevention and control protocols and standards.

RESEARCH QUESTION:

- Whether the intervention has increased the knowledge of 76 persons (62 nurses, 4 doctors, 2 physiotherapists, 8 GDA) about Hospital Acquired Infection?
- Whether the intervention has improved the practices of 76 persons (62 nurses, 4 doctors, 2 physiotherapists, 8 GDA) regarding the adherence of infection, prevention and control standards and protocols in the ICU and IPD ?

Research Methodology

- **The study design:**

This study used a quantitative research methodology. Type of study is pre-test post-test study. The present study was carried out in the IPD and ICU of SRS Hospital Faridabad from 5th to 28th March 2016.

Study Population

Study Population: Total 76 persons (62 nurses, 4 doctors, 2 physiotherapists, 8 GDA) have answered a questionnaire in pre-test and post-test.

Selection Criteria:

Inclusion criteria for sampling

- Staff involved in direct patient care (ICU & IPD)

Exclusion criteria for sampling

- Nurses who are not present at the time of my study.
(2 nurses were on leave for one month)
- Nurses who are in supervisory category or recently joined to the hospital.
- Consultants.

The study was carried out for 20 working days.

- First 9 days: Observation was carried out.
- Next 2 days: Questionnaire was given to test the knowledge and training was conducted.
- Last 9 days: Observation was carried out.
- On last day questionnaire was given again.

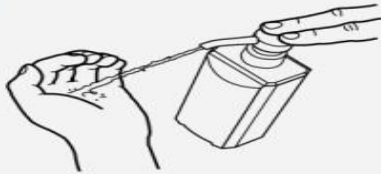
How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED



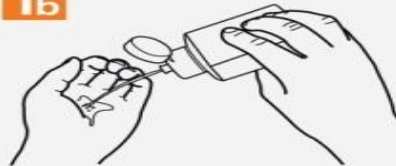
Duration of the entire procedure: 20-30 seconds

1a



Apply a palmful of the product in a cupped hand, covering 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



Backs of fingers to opposing palms with fingers interlocked;

6



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

7



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8



Once dry, your hands are safe.



World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES
Clean Your Hands

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How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

 Duration of the handwash (steps 2-7): 15-20 seconds

 Duration of the entire procedure: 40-60 seconds



Wet hands with water;



Apply enough soap to cover all hand surfaces;



Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



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



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.



World Health
Organization

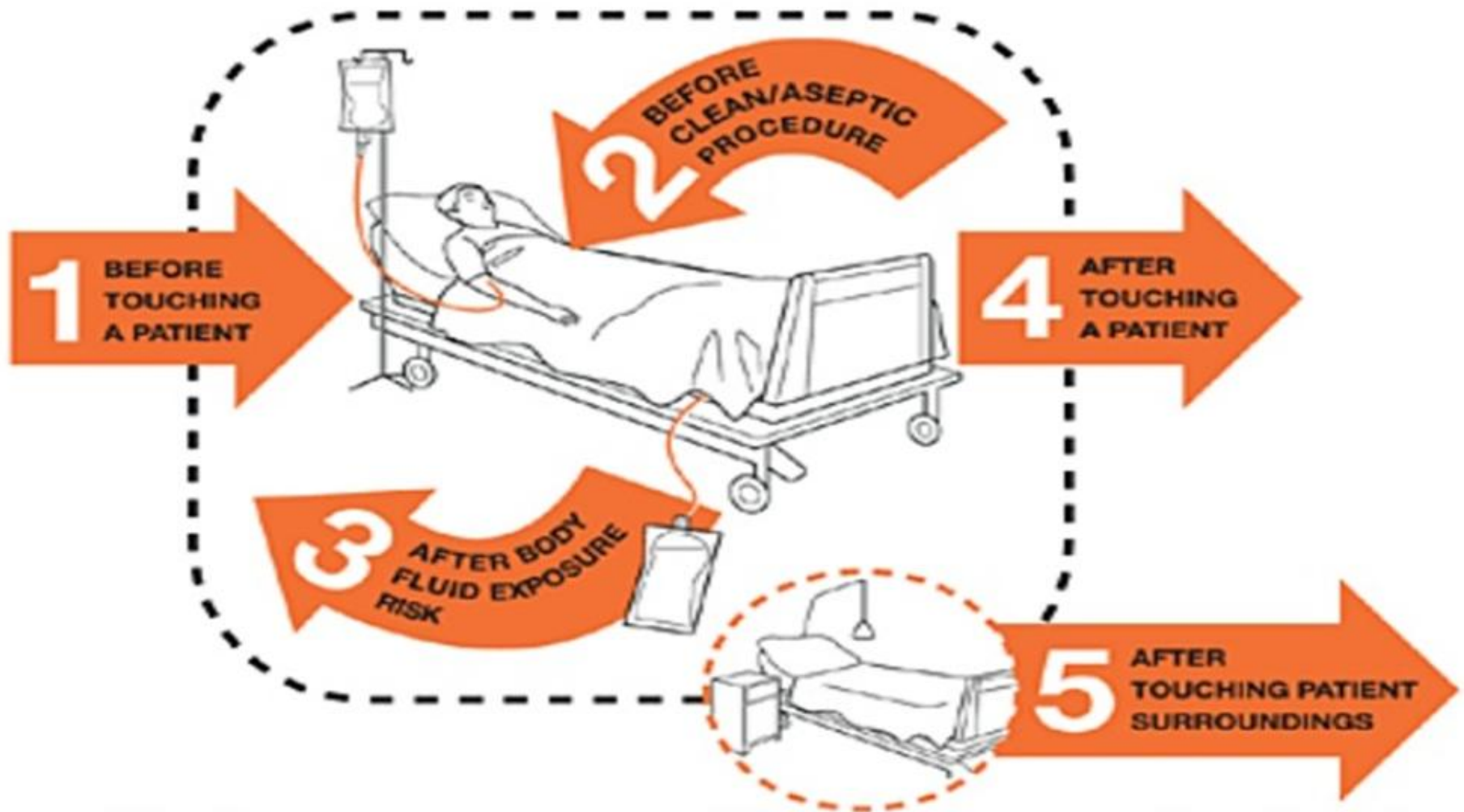
Patient Safety

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Clean Your Hands

When you Wash Hands in Health Care



Data Collection

Objective 1:

- Data was collected with the help of questionnaire; which was prepared from the infection control manual of SRS Hospital with the help of microbiologist and Infection Control Nurse (ICN).

Objective 2:

- The observational list has been prepared by using the literature study. This includes international guidelines and standard specific SRS Hospital standards and protocols on infection prevention and control.

Data Analysis

- Questionnaire (Pre-test and Post-test) has been analyzed in MS Office excel sheet.
- Observation List for ICU has been analyzed in MS Office excel sheet.

Frequency for use of Alcohol Rub

ACTIVITIES	TOTAL OBS.	PRE TEST	TOTAL OBS.	POST TEST	<i>PERCENT INCREASE</i>
Before Touching The Patient	196	17	201	151	66.45
After Touching The Patient	196	12	201	132	59.55
Before Handling Body Fluids	174	0	166	81	48.80
After Handling Body Fluids	174	18	166	110	55.92
After Removing Gloves	62	21	59	49	49.18
Before Eating	117	5	111	41	32.66
After Eating	120	0	103	39	37.86
Giving Food To Patient	105	0	93	65	69.89
TOTAL	1144	73	1100	668	54.35

Frequency of Hand Washing

ACTIVITIES	TOTAL OBS.	PRE TEST	TOTAL OBS.	POST TEST	<i>PERCENT INCREASE</i>
Before Touching The Patient	196	9	201	111	50.63
After Touching The Patient	196	22	201	128	52.46
Before Handling Body Fluids	174	3	166	70	40.44
After Handling Body Fluids	174	34	166	153	72.63
After Removing Gloves	62	31	59	51	36.44
Before Eating	117	69	111	102	32.92
After Eating	120	81	103	106	35.41
Giving Food To Patient	105	0	93	47	50.54
TOTAL	1144	249	1100	768	48.05

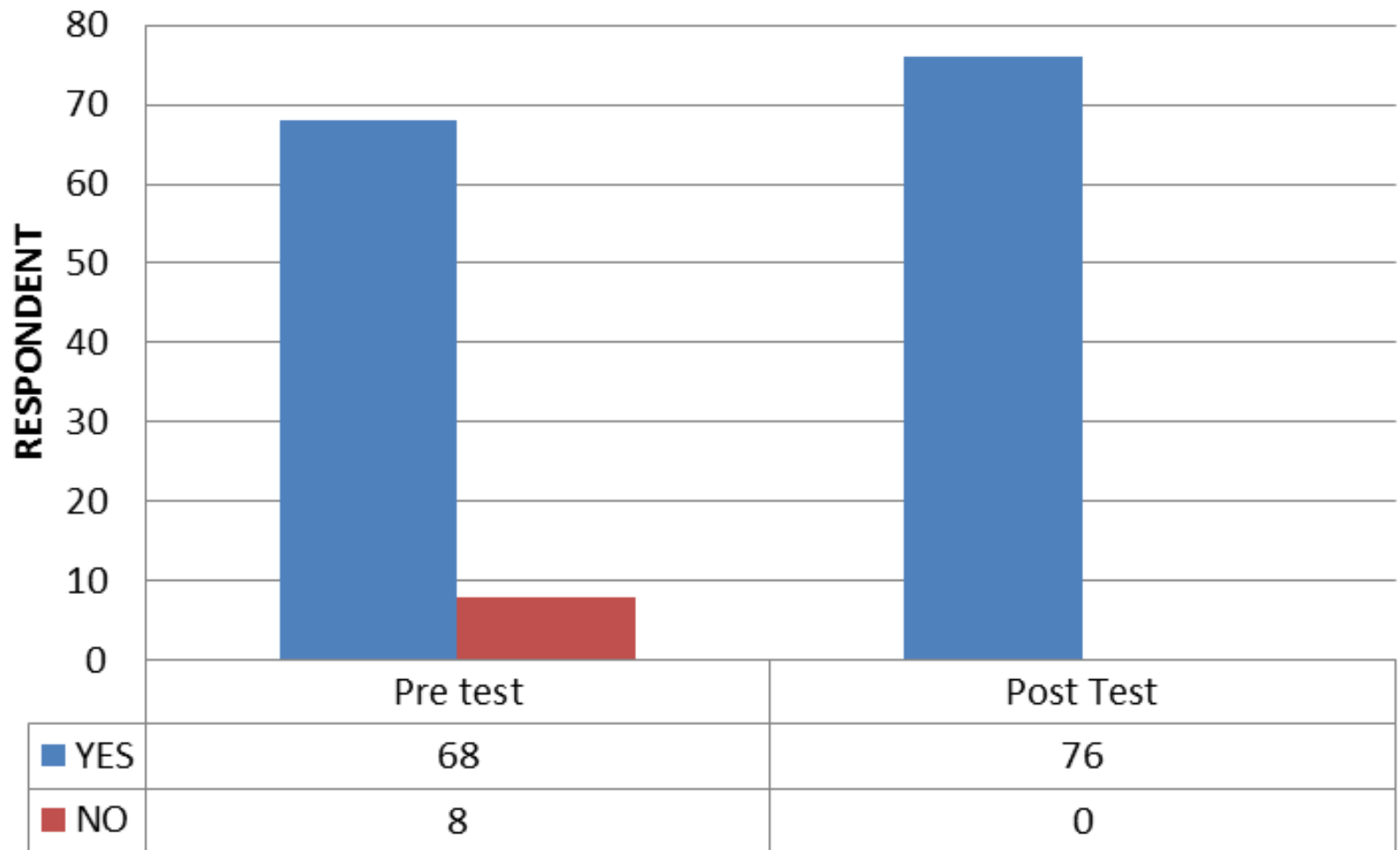
Frequency for use of Gloves

ACTIVITIES	TOTAL OBS.	PRE TEST	TOTAL OBS.	POST TEST	PERCENT INCREASE
Blood Sample Drawing	92	12	87	54	49.03
Contact with Other Patient	55	3	62	34	49.38
Touching Body Fluids	37	27	36	35	24.25
Cleaning the Patient	44	28	40	39	33.86
Cleaning the Room	25	6	27	19	46.37
For a Procedure/Dressing	42	39	51	51	7.14
TOTAL	295	115	303	232	37.58

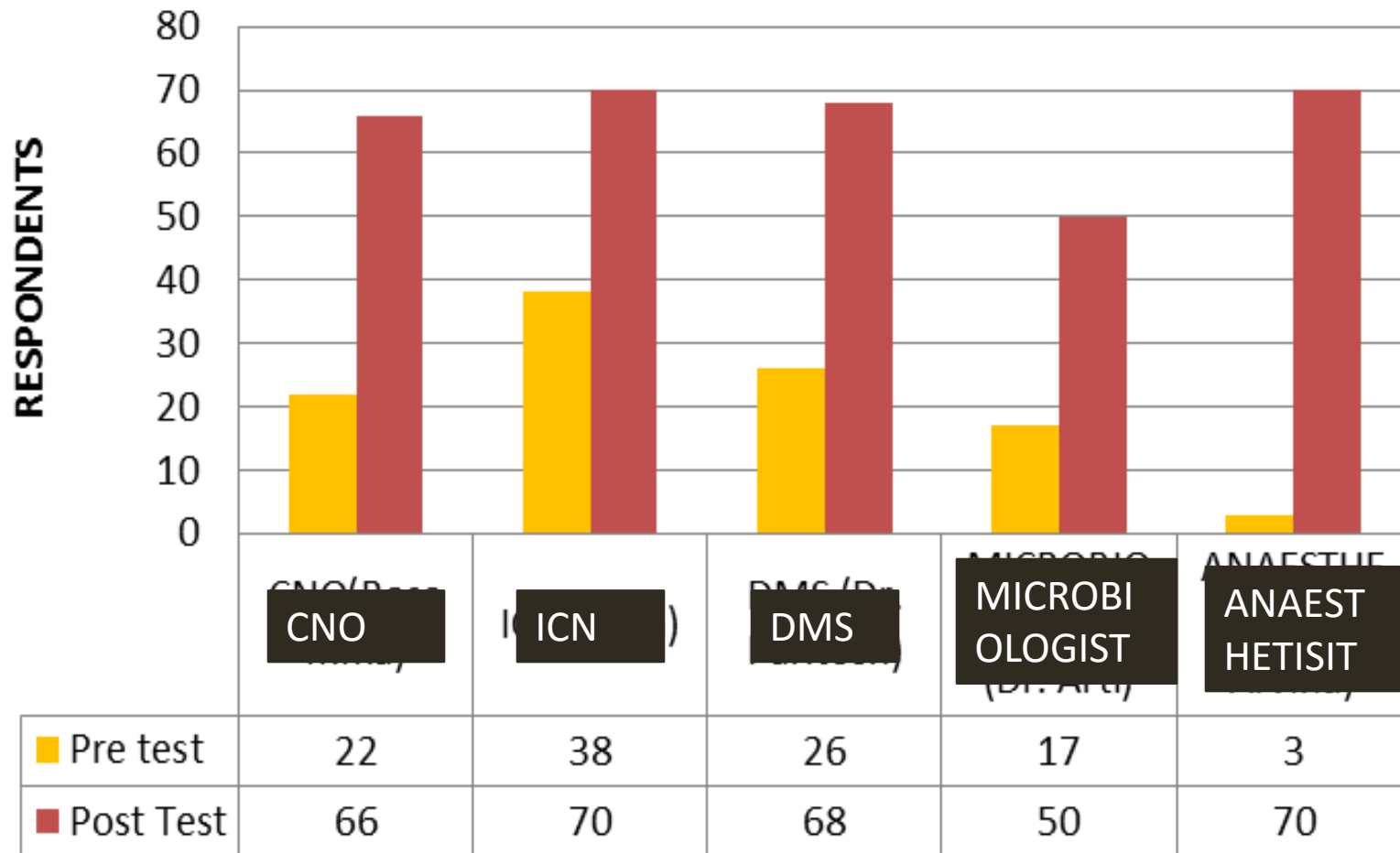
Frequency for cleaning different areas by GDA

ACTIVITIES IN 24 HRS	PRE TEST	POST TEST	PERCENT INCREASE
Sweeping of floors	2	3	33.33
Cleaning of Toilets on floors	2	4	50
Cleaning of Ward Furniture	1	1	0

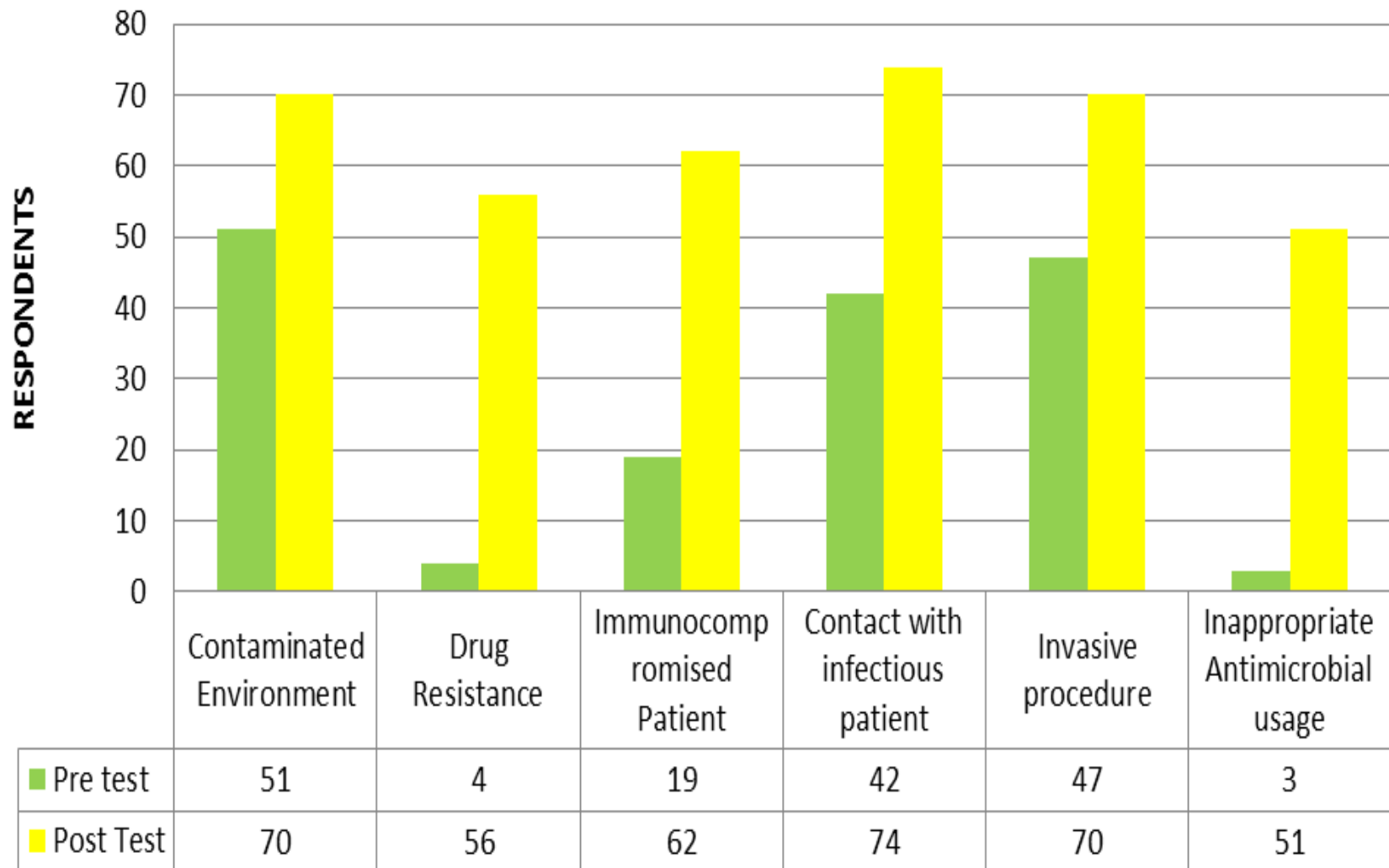
Knowledge about Hospital Acquired Infection.(n=76)



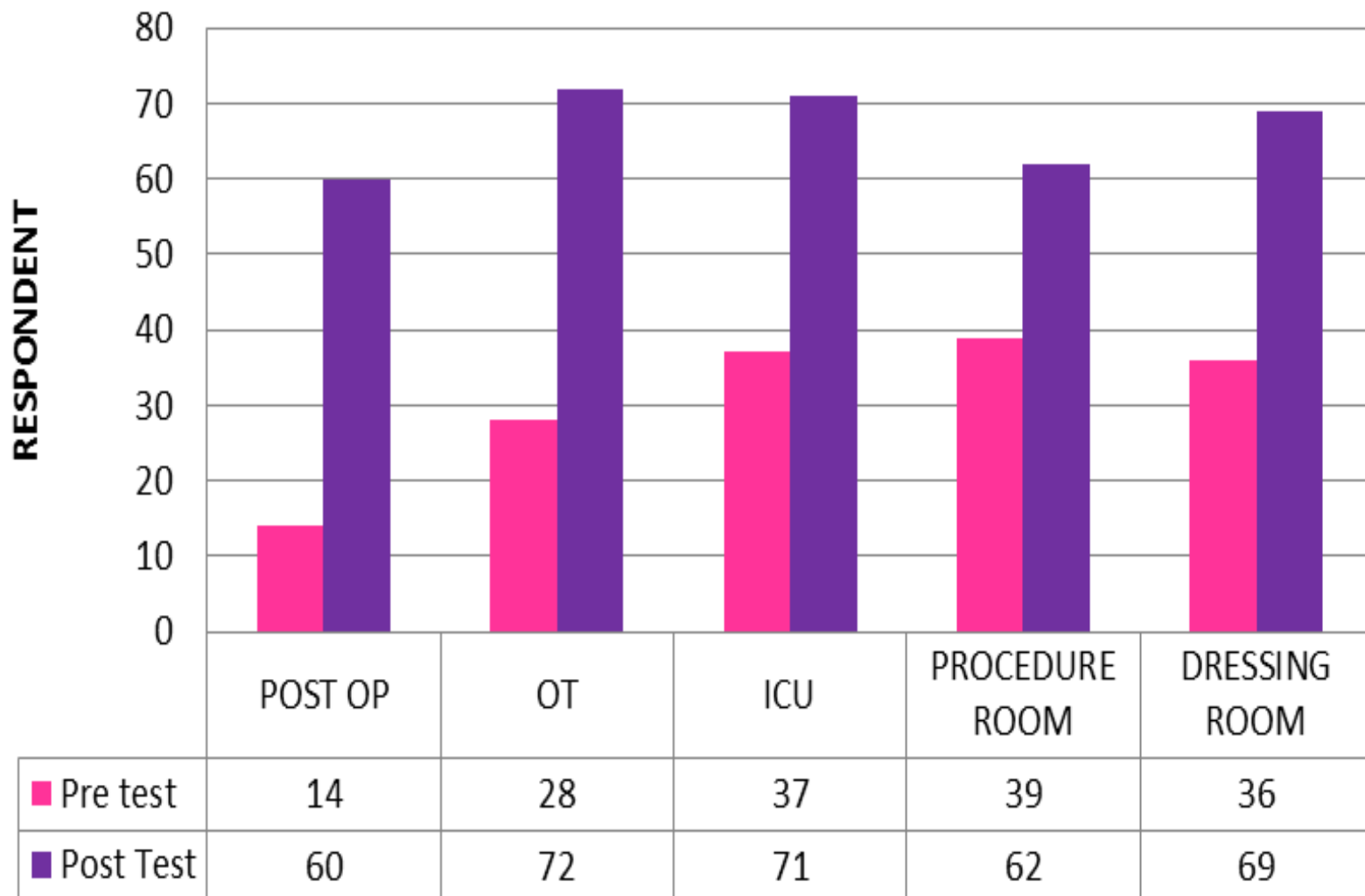
Knowledge on Name of members of (Hospital Infection Control) HIC Committee .(n=76)



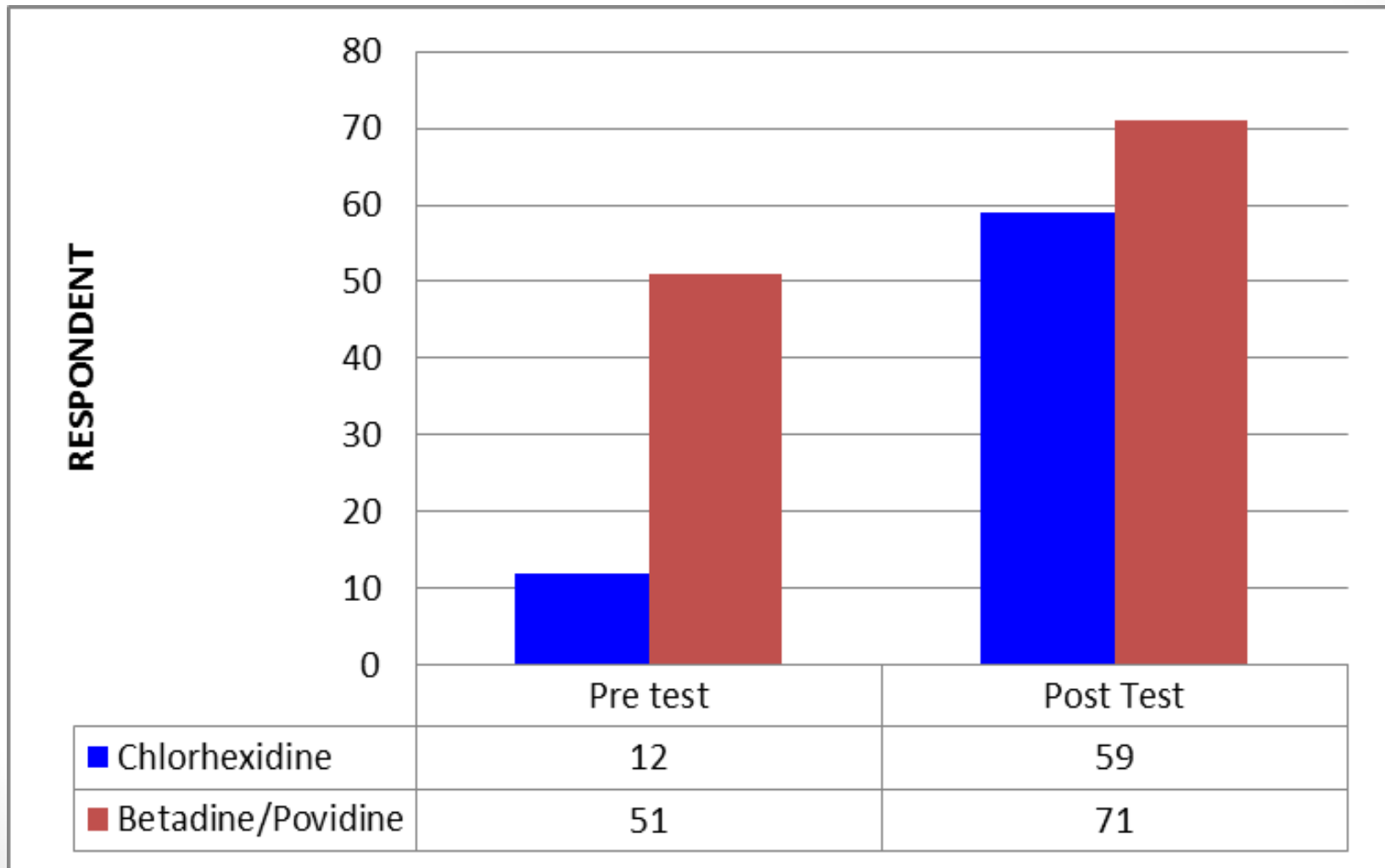
Knowledge on Risk Factors of Hospital Acquires Infection.(n=76)



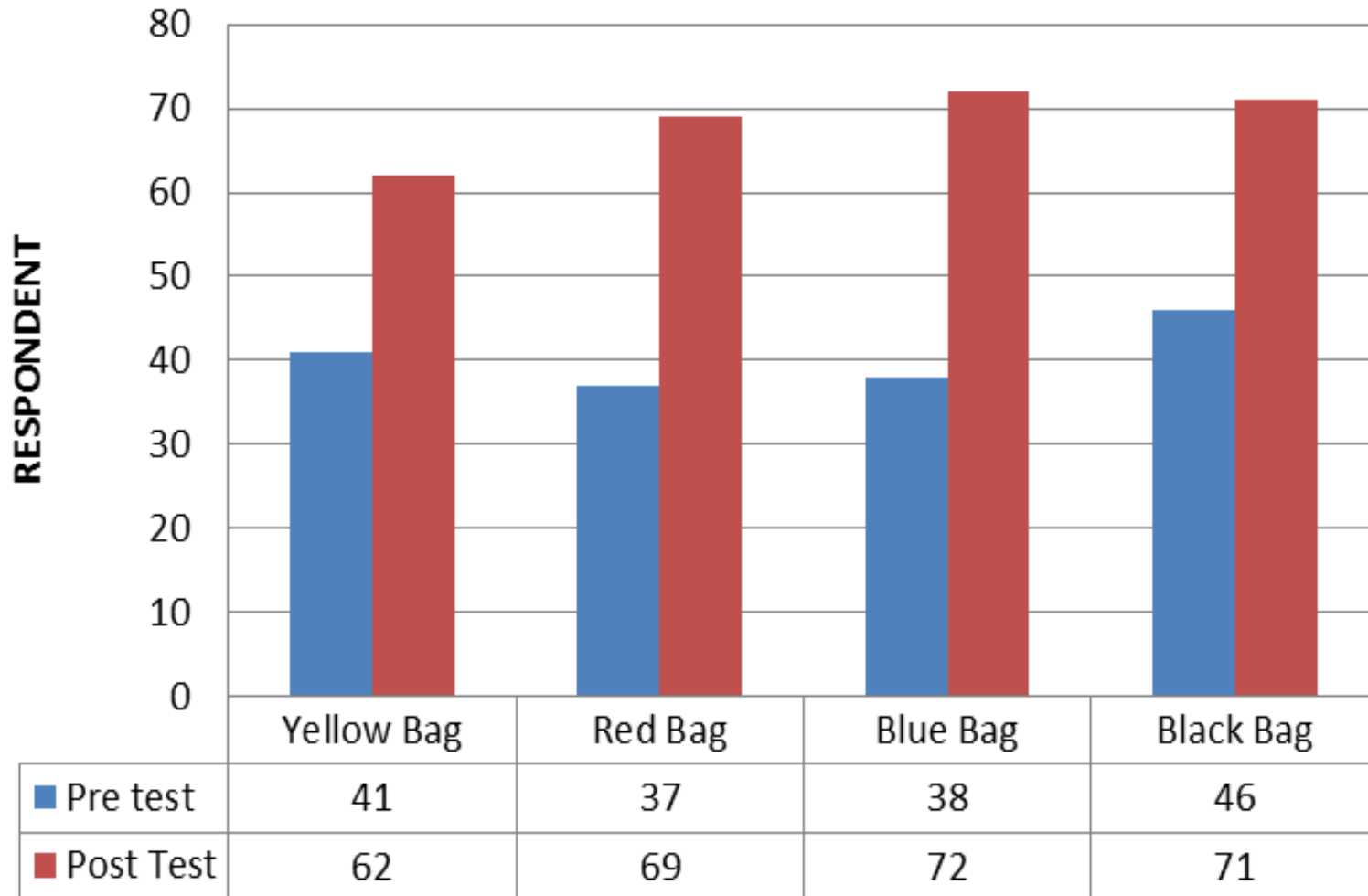
Knowledge on High Risk Areas in Hospital (n=76)



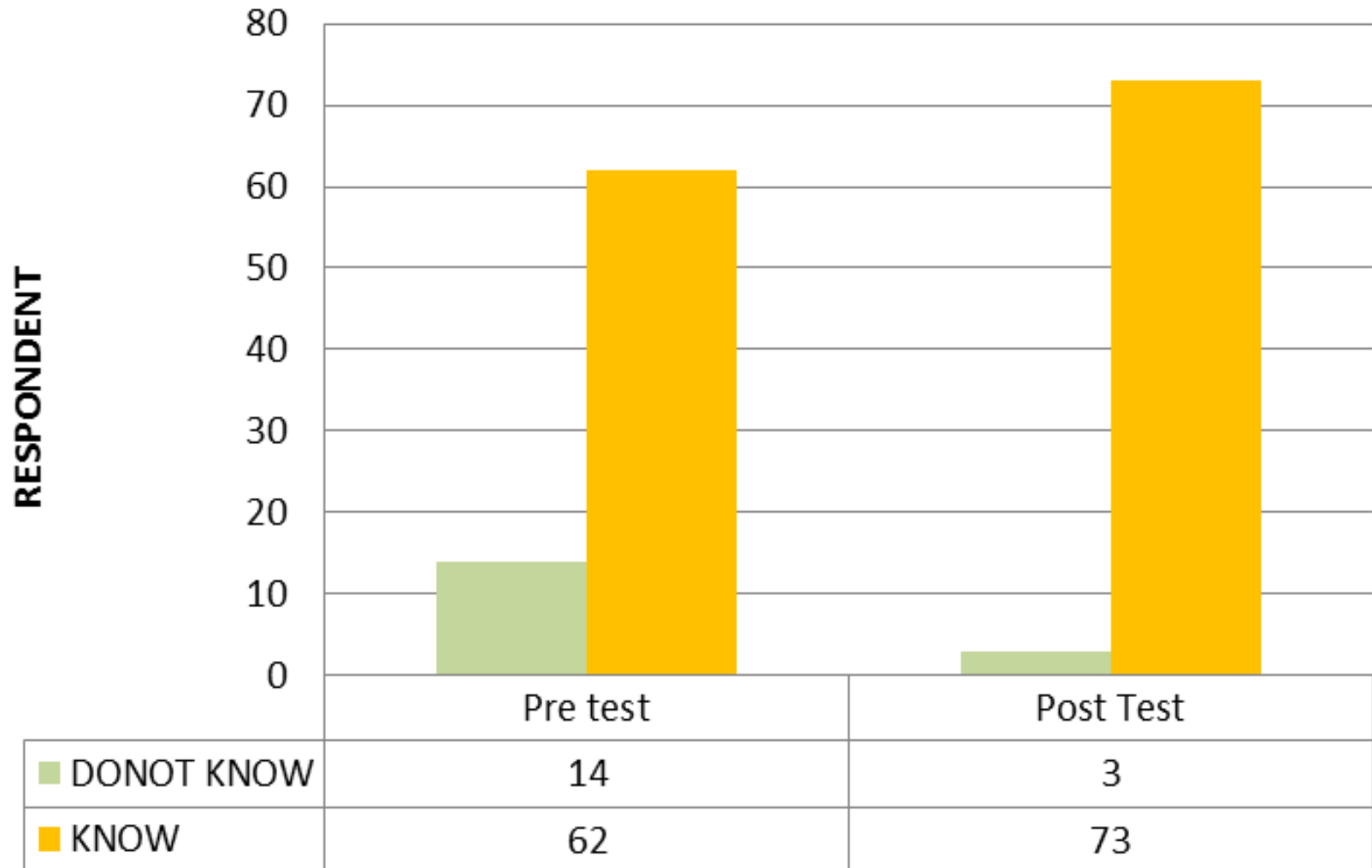
Knowledge on Preparation before Catheterization (n=76)



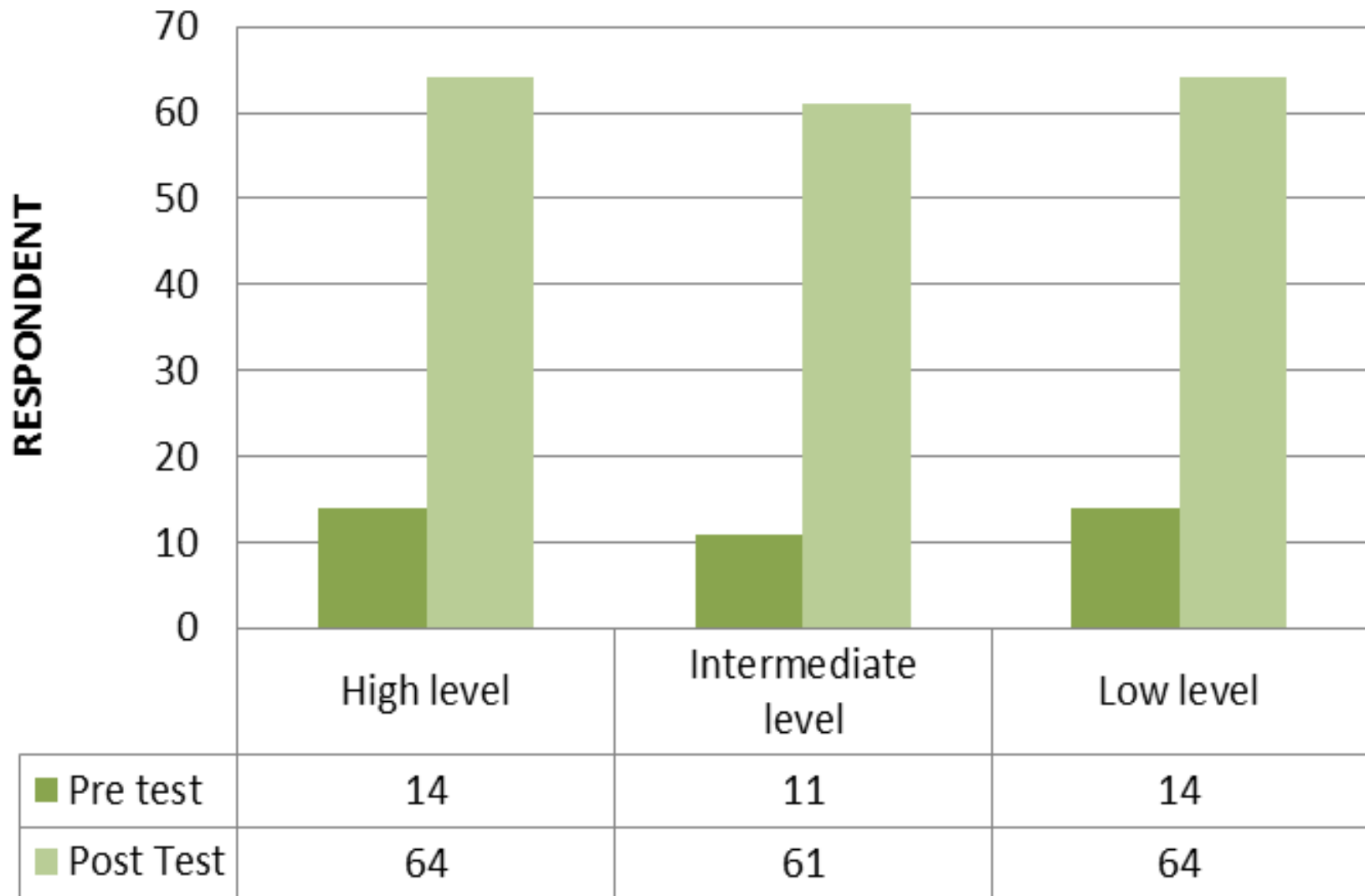
Knowledge on Categories of waste disposal bag (n=76)



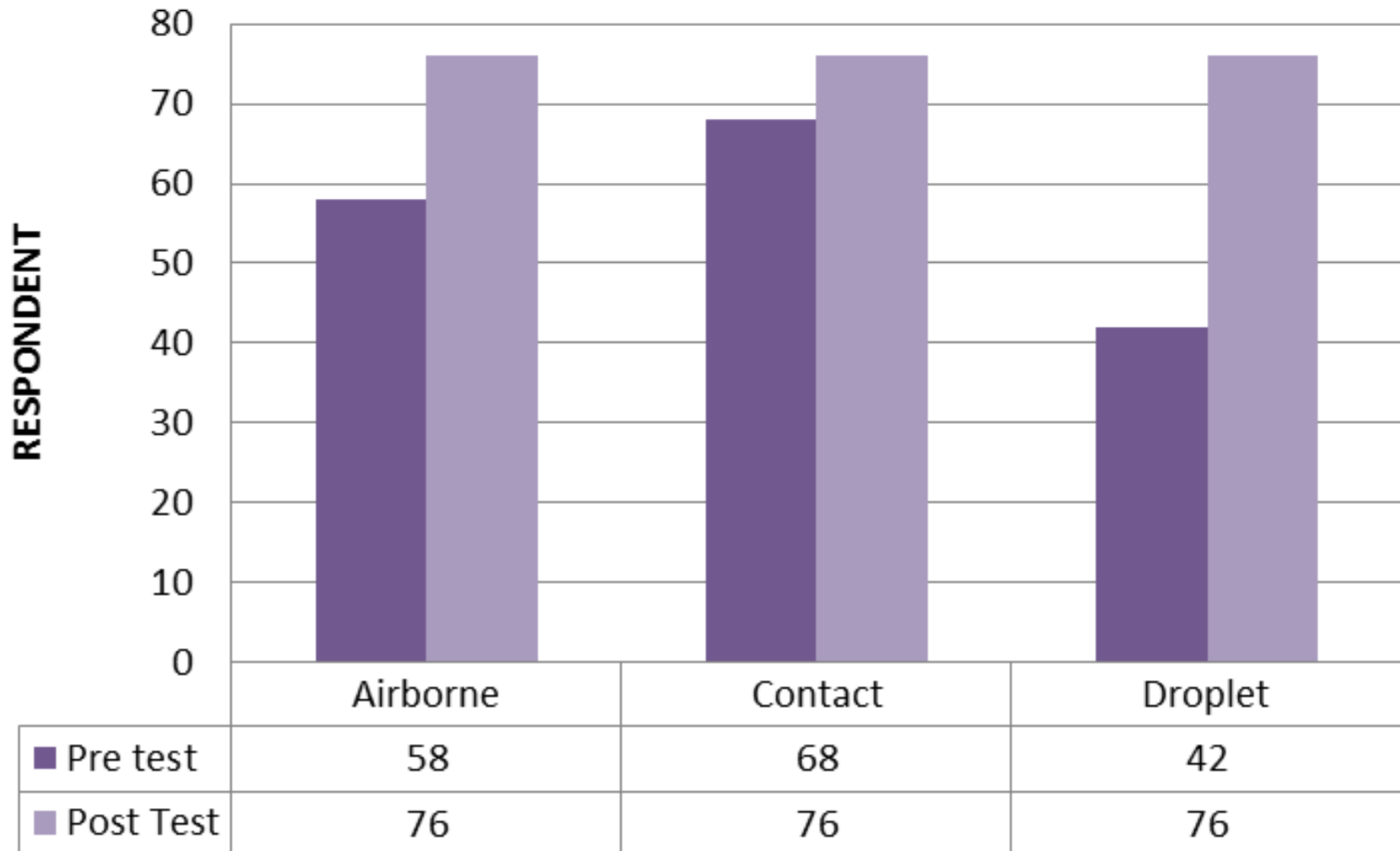
Knowledge on the patient label of HIV/Hepatitis B (n=76)



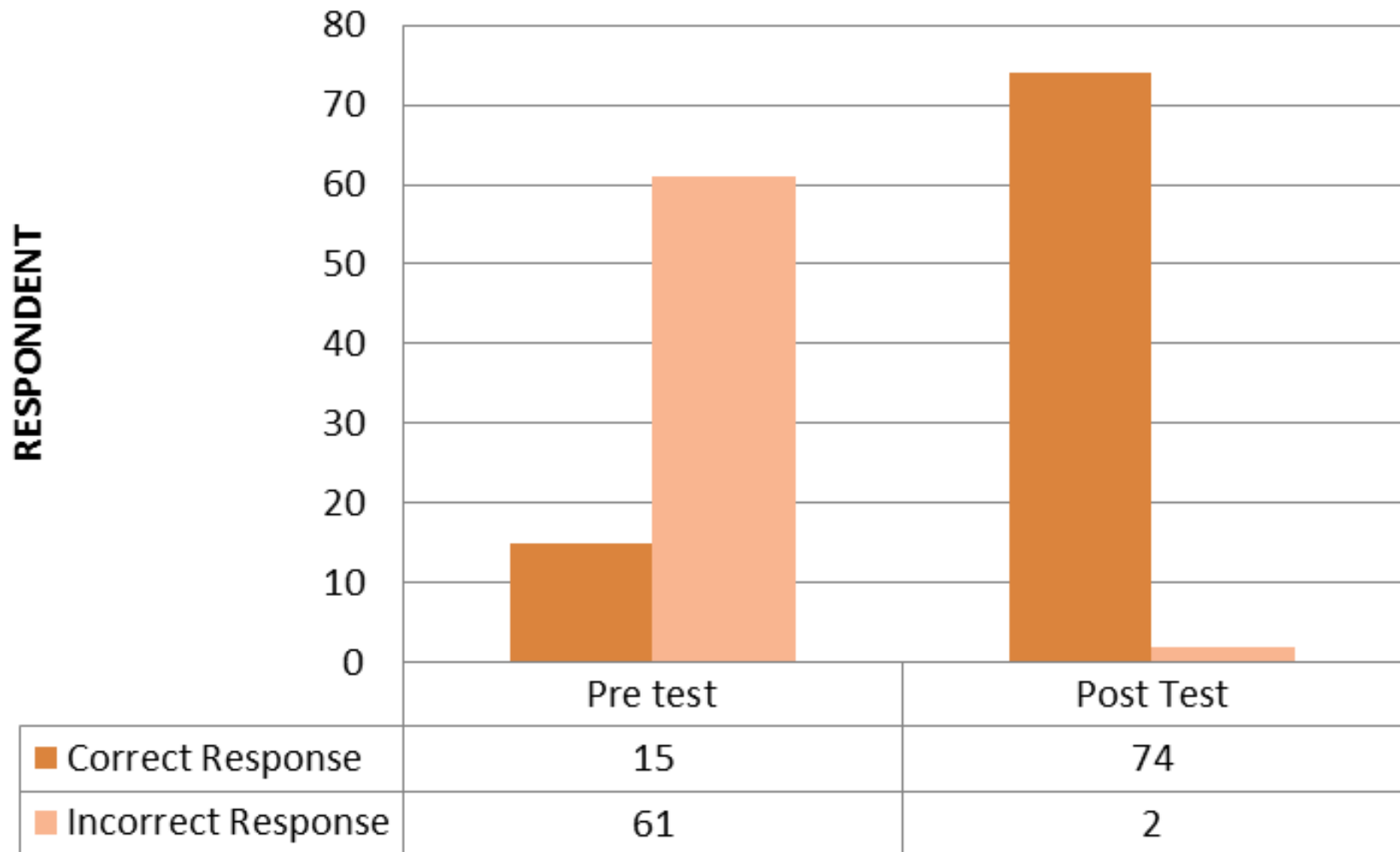
Types of Disinfectant .(n=76)



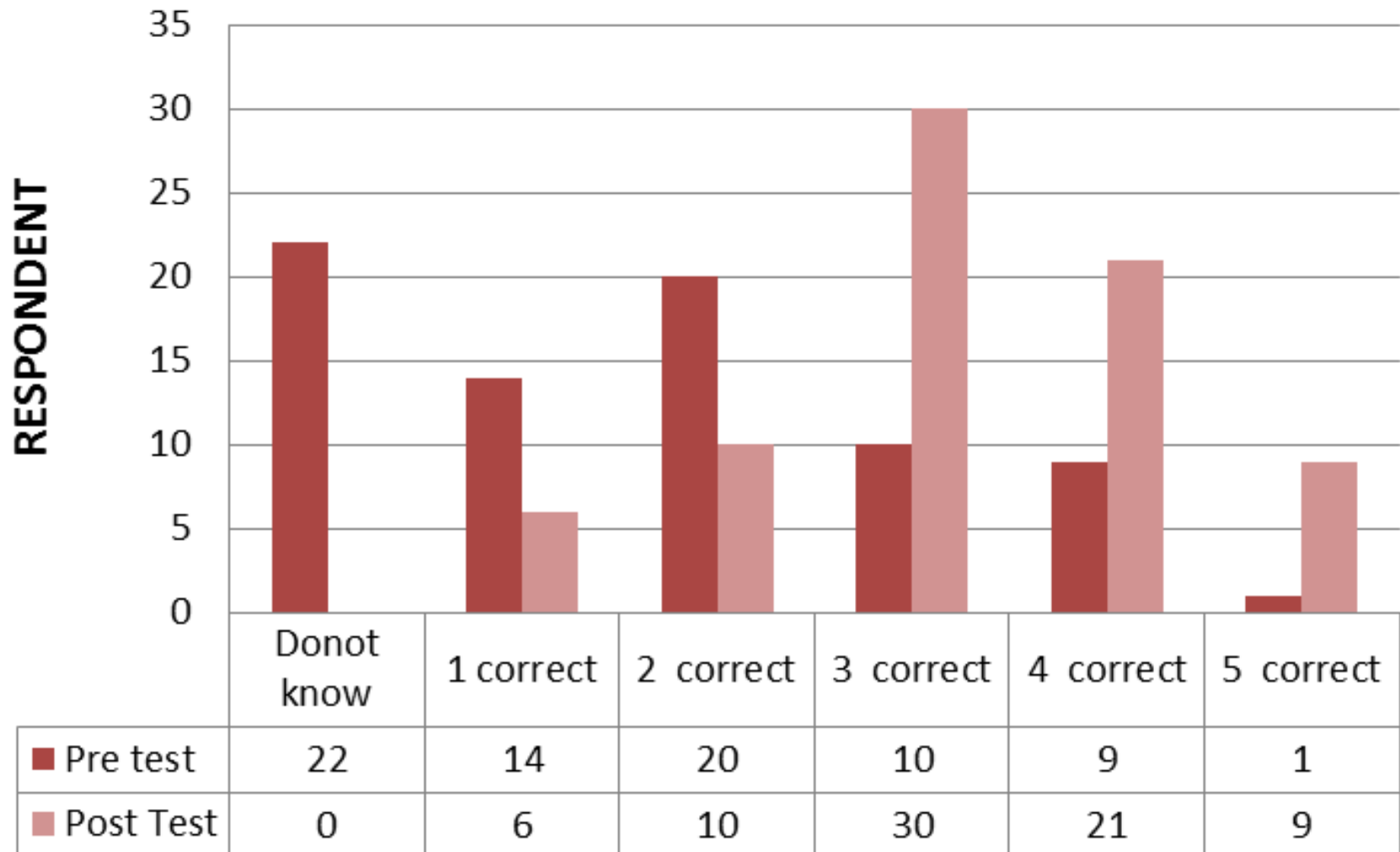
Knowledge on Categories of Transmission (n=76)



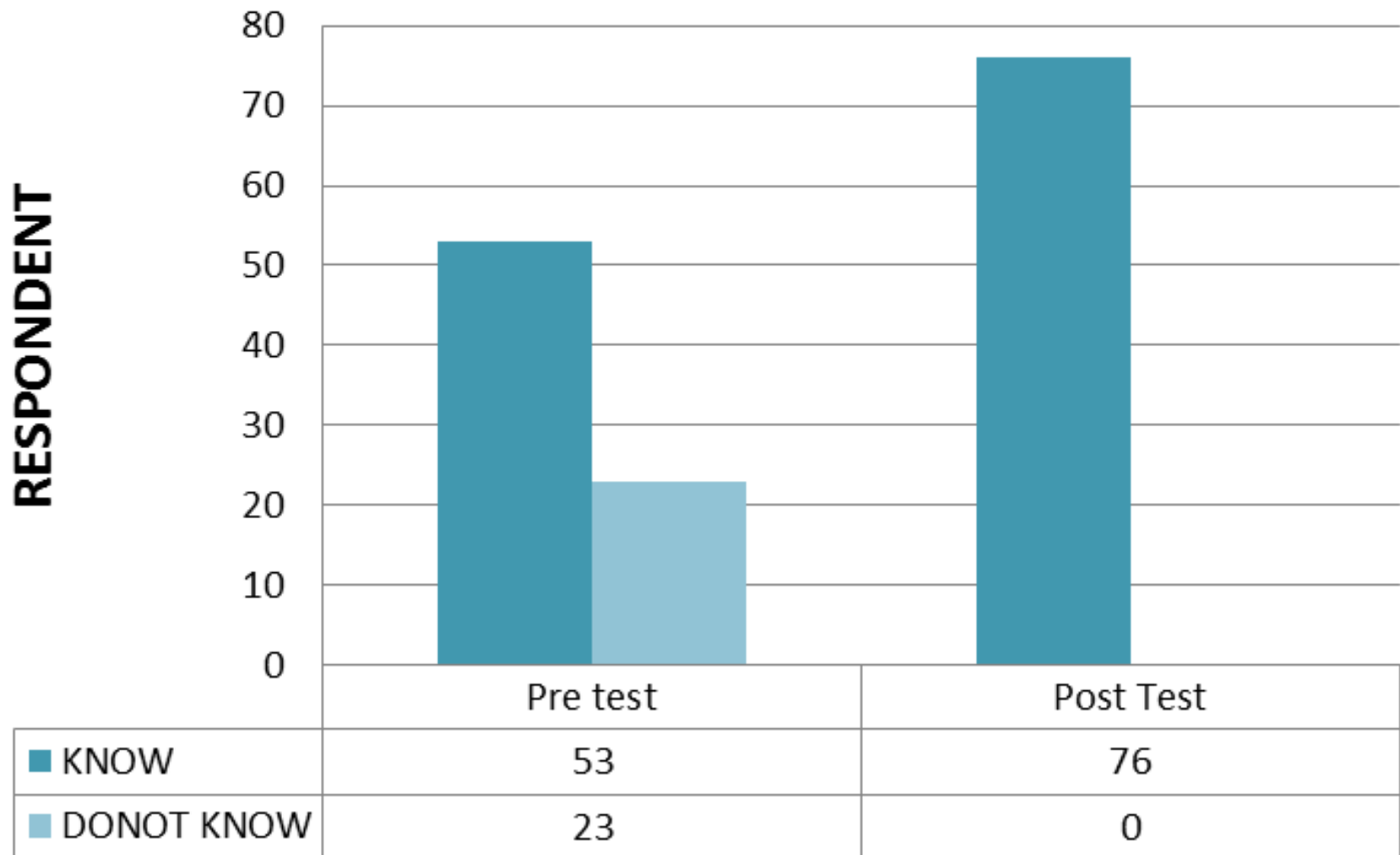
Knowledge on steps involved in hand washing (n=76)



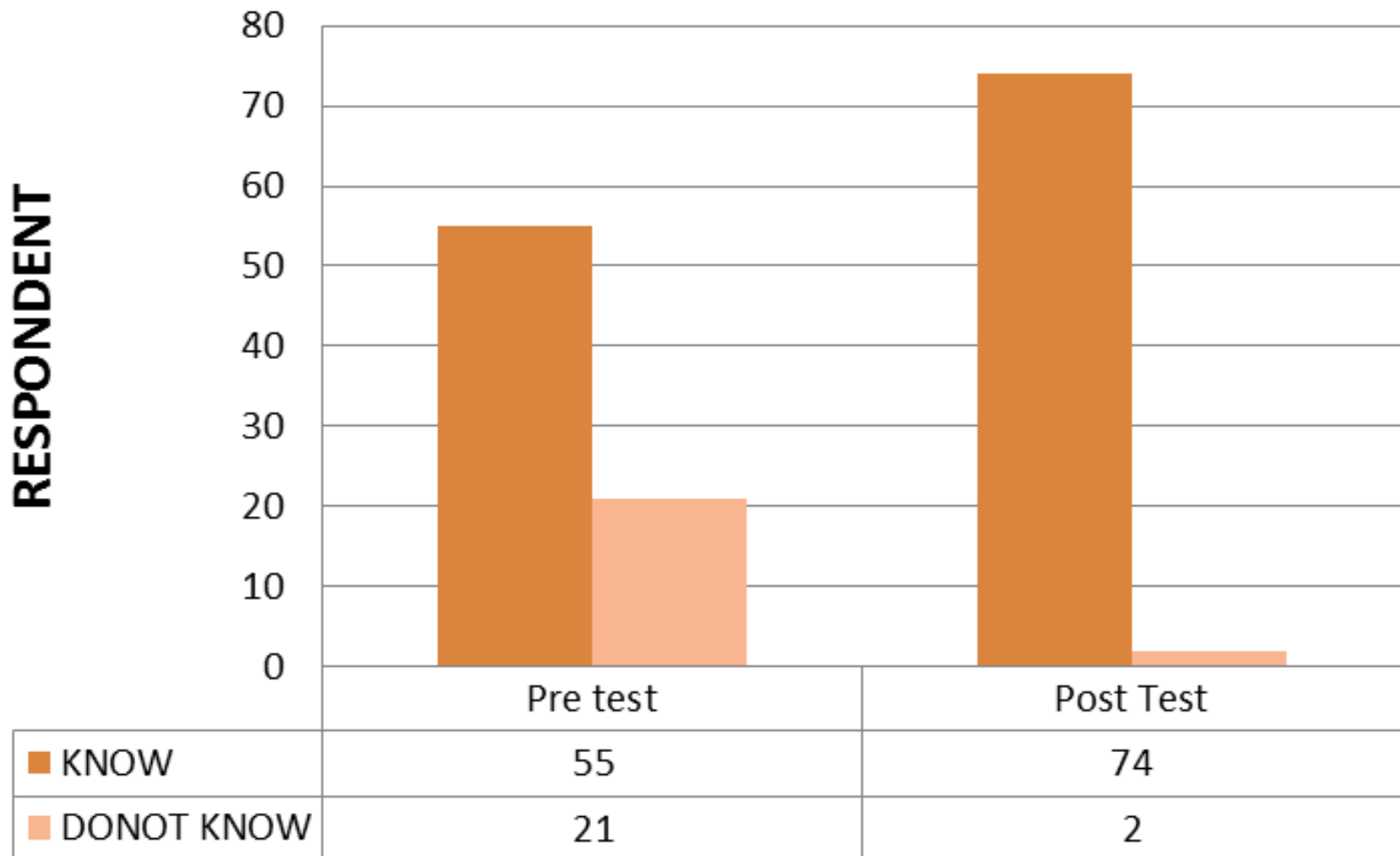
Knowledge on Number of Notifiable Diseases .(n=76)



Knowledge on Disposal of needles in 1% Hypochlorite Solution .(n=76)



Knowledge on cleaning of Probes with 70% Isopropyl Alcohol .(n=76)



Recommendations

- Knowledge regarding infection control (e.g. risk factor for HAI, defining outbreak, types of disinfectant use, types of hand washing), were very low, regular training of nurses regarding infection control should be done at least once in a week.
- Display of motivational videos at nursing station (Hand Washing technique, use of PPE)
- Equipping of elbow close tap or sensor tap should be placed instead of hand closed faucet.
- Placing of alcohol rub solution should be placed at side of every bed in the ICU.

- As there was one team leader for nursing staff they should become the role model for everyone to perform all infection control practices and can supervise them as they come.
- Wearing of gloves/ beliefs that glove use obviates the need for hand hygiene. This should be encouraged by team leaders.
- Lack of nursing staff because of that the nursing staff was often too busy/ insufficient time to perform hand hygiene practices. Ratio of nurse to patient should be increased in ICU.
- Observation study should be conducted by the ICN every month to measure the compliance on infection control practices.

Conclusion

- Hospital infection (Nosocomial Infection) is a major cause for long hospital stay and financial burden on patient as well as work burden of healthcare providers increases.
- With better understanding of the causes or risks of hospital infection, the care givers can reduce the rate of infection.
- This not only decreases the burden of the disease but also decreases the length of stay in hospital and hence decreases the ALOS.

- The study has depicted a significant change in staff behavior and practices regarding infection control. Due to limitation of time and other resources only the effects of training have been analyzed. A small analysis on the change in ALOS and hospital infection rate is recommended in order to know the outcome of the intervention.

References

- Patient Safety And Quality: An Evidence Based Handbook For Nurses: Volume 2
- A guide book to NABH standards on hospital accreditation second edition
- Global patient safety challenge: clean care is safer care (2005-2006)
- Infection Prevention and Control, World Health Organisation (WHO) guidelines (2011)

Thank
you

