Knowledge, Attitude, and Practice Study of Infection Prevention Among Nurses and Housekeeping Staff of a Private Hospital in Bhubaneswar, Odisha

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by
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ABSTRACT

Background:

Nurses and housekeeping staff are the healthcare professionals whose duties are to protect the patients from acquiring infections during their stay at the hospital. A patient's recovery will be promoted by delivering high-quality nursing care and by maintaining an infection free environment. Therefore, this study was conducted for a better understanding and assessment of the knowledge, attitude, and practice of healthcare personnel in a private hospital at Bhubaneswar, Odisha.

The aim of the study was to understand the knowledge, attitude, and practice of infection prevention among nurses and housekeeping staff of the hospital.

The objectives were to determine:

To assess the knowledge of infection control protocols among nurses and housekeeping staff.

To measure the attitude of nurses and housekeeping staff towards infection control protocols.

To observe the infection control protocols practiced by nurses and housekeeping staff.

Methods:

A quantitative descriptive study was conducted at a private hospital in Bhubaneswar, Odisha. A stratified random sampling was performed. A total of 50 nurses and 20 housekeeping staff were considered in this study.

Guided by hospital policies, procedure standards and infection prevention and control guidelines, a self-developed validated close-ended questionnaire was used for data collection.

A descriptive cross-sectional study was done with 70 staff which includes nurses and housekeeping staff only, in the private hospital in Bhubaneswar, Odisha.

Results:

A response rate of 100% was seen during the main study. Around 70 questionnaires were distributed and the same 70 participants completed the questionnaires.

Conclusion:

To further improve the knowledge, attitude and practices of the nurses and housekeeping staff in infection prevention and control is recommended by regular training and audits of the hospital staffs in infection control measures and practices.

Keywords: Knowledge, Attitude, Practice, Infection prevention and control, Nurses, Housekeeping staff.

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The internship opportunity I had with Vivekananda Hospital was a great chance for learning and professional development. Therefore, I consider myself as a very fortunate 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 through this internship period.

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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, to attain desires career objectives. I hope that I can build a career upon the experience and knowledge that I have gained and make a valuable contribution towards this industry in coming future.

TABLE OF CONTENTS

ABBREVIATIONS

SL. NO.	ABBREVIATIONS	EXPANSION
1.	HBV	Hepatitis B virus
2.	HCW	Healthcare worker
3.	KAP	Knowledge, Attitude, and practice
4.	HAI	Hospital Acquired Infection
5.	IPC	Infection prevention and control
6.	PPE	Personal Protective Equipment
7.	WHO	World Health Organization
8.	SSI	Surgical Site Infection
9.	CVC	Central Venous Catheters
10.	MRSA	Methicillin-Resistance Staphylococcus Aureus

VIVEKANANDA HOSPITAL

In the year 2005, Vivekananda Medical Mission Ltd was established as registered under companies Act of 1956. It is situated in Bhubaneswar, the capital of State of Odisha. The building is located at the fire station square, just beside the National Highway and it is well connected by road to all over the state. This hospital is 106 bedded and function as a multispecialty hospital.

The hospital is equipped with 18 bedded ICU with 8 ventilators, multi parameter monitors with invasive as well as non-invasive pressure monitoring and continuous ECG recording are attached to each bed. The unit is supported by trained residents, intensivists with qualified staff nurses. Technicians and physiotherapists are available round the clock to give a close care to the critically risk patients.
The hospital is well known for its emergency and trauma care service which functions round the clock supported with radiology services like CT scan, ultrasonography, digital X-ray, and also laboratory services.

Vivekananda hospital has highly sophisticated set up with the best of technology and science., having panel of specialist and super specialist. They have a commitment of excellence and give homely and secured facilities to patients and their relatives. They understand the importance of life thus ensuring best medical emergency services and best nursing care thus making patient a better care.

MISSION: Vivekananda Hospital is to bring about a revolution in healthcare services that is the basic necessity of the society. It aims to grow with the happiness among patients and to bring leverage in treatment, cost effectiveness, quality and techno-innovations.

VISION: Vivekananda Hospital promises to provide highest standard of professional expertise, updated diagnostic and therapeutic technology, streamlined efficiency of service with courteous

personal attention. To create affordable and effective health care services for all classes of the society and have outreach to country sides with social disposition and responsibility.

VALUES: To create and sustain a 'work culture' marked by a high degree of 'urgency and discipline' a great sense of 'responsibility' and a level of sincerity akin to 'total devotion' to patient care.

Available facilities are:

- Trauma care unit
- Intensive care unit (ICU)
- 24 hours casualty
- 24 hours laboratory
- 24 hours Pharmacy
- 24 hours ambulance services
- 24 hours digital X-ray service
- 2 operation theaters with 24 hours back up
- OPD & IPD department
- Dedicated Labor and delivery room
- USG & 2D Echo
- Deluxe and super deluxe room
- Cashless facility

i. **As a patient care** - provides expert consultation with specialist and super specialist of all departments.

ii. **Specialized Clinic** - provides care and treatment for chronic long-standing diseases with experienced and qualified clinician.

iii. **Vivekananda Hospital preventive health checkup** - cannot be emphasized beyond the old age adage "Prevention is better than cure". Thus, it is committed to the cause of preventive health through its comprehensive health checkup packages.

iv. **Diagnostic & Lab services** - provides quality and standardized report for various tests in radiology, cardiology, neurology, gastrology, enterology and laboratory services.

v. **Emergency trauma & critical care** – time is life. Provides world class emergency and trauma care by highly professional doctor and paramedical team ready to serve you round the clock.

vi. **Hospital at your doorstep** – promoted under the Vivekananda Hospital Galaxy which is an initiative to provide domiciliary health care at your home which includes laboratory tests, EEG & ECG, IV fluid and injection and Doctor on call.

DEPARTMENTS:

Specialties:	**Super Specialties**
Medicine & critical care	Neurology & Neurosurgery
General & laparoscopic surgery	Kidney Care (Nephrology & Urology)
Pediatric & Pediatric surgery	Orthopedics & Joint replacement
Obstetrics & Gynecology (Ob & Gyn)	Gastroscience
ENT (Ear, Nose, and Throat)	Cardiology
Ophthalmology	Plastic & Reconstructive surgery
Physiotherapy & rehabilitation	Dental & Maxillofacial surgery
Dietician & Nutrition	Oncology Science
Emergency & Trauma care	Anesthesiology
Psychiatry	

CHAPTER 1
INTRODUCTION

To decrease the transmission and acquisition of infection causing agents, healthcare personnel practice some measures in healthcare facilities. Such measures are known as infection control. The basis of infection control measures in formed by the mode and mechanism of transfer of an infectious agent. The infection measures include actions against contact, droplet, airborne transmission and standard precautions.

The aim of all the policies, activities and procedures is to prevent or minimize the risk of transmission of infections at healthcare facilities, therefore known as infection control. There should exist a need for effective infection control programs in all healthcare facilities, with the emerging life-threatening infections like COVID-19 and other infectious diseases. To prevent the transmission of infectious diseases in the healthcare settings, the need for capacity building in healthcare workers is a priority.

While the healthcare workers are practicing the healthcare profession, they are the most vulnerable to many infectious diseases. Healthcare people are susceptible to many infectious illnesses at the same time as they're working towards the healthcare profession. As a result, they're on the verge of having inflamed via way of means of numerous illnesses because of place of business hazard

While the healthcare workers are practicing the healthcare profession, they are the most vulnerable to many infectious diseases. Healthcare people are susceptible to many infectious illnesses at the same time as they're working towards the healthcare profession. As a result, they're on the verge of having inflamed via way of means of numerous illnesses because of place of business hazard. There are several measures that healthcare employees have to be privy to shield themselves towards those infections. The precept that each one frame fluids consisting of blood, secretions, excretions, non-intact pores and skin and mucous membranes would possibly showcase transmissible infectious retailers' bureaucracy the number one foundation of maximum

of the contamination manage measures. This kind of publicity ordinarily takes location whilst acting foremost or minor surgical procedures, whilst rendering ordinary offerings to the affected person consisting of bodily exam with the aid of using healthcare providers, pattern series for laboratory investigation, whilst disposing health center waste and whilst accomplishing any twist of fate or lifesaving emergency procedure.

The incidents of occupational publicity are regularly located in hospitals settings specially due to lack of awareness and exercise of contamination manage measures and precautions in those healthcare facilities. There can be versions withinside the know-how among healthcare people concerning the contamination manage precautions which can also additionally fluctuate due to several one-of-a-kind trainings introduced to them. Sometimes, there can be scarcity of positive non-public protecting equipment, both because of loss of sources with the health center or because of excessive call for the duration of disaster as visible for the duration of COVID-19 pandemic, which could affect the contamination manage surroundings in health center and bad compliance to the contamination manage protocols and measures.

HBV is a well-diagnosed occupational danger for healthcare people. The actual scale of occupational danger withinside the fitness sector, in step with World Health Organization, isn't clear, in part, due to the stigma and blame that exists in hyperlink with the reporting of sharps accidents and in part due to the shortage of availability of post-publicity prophylaxis. KAP is a critical cognitive device in public fitness concerning fitness prevention and promotion. The examine is performed to degree the KAP of contamination manage precautions many of the healthcare people in non-public health facility in Bhubaneswar, Odisha.

Researchers all over the arena display that there exists sizable inadequacy in majority of fitness care people, KAP closer to fashionable precautions which isn't always favorable and secure sufficient to the predicted fashionable. There is big discrepancy withinside the expertise of contamination prevention measures and practices amongst healthcare people. A sties results in endangered affected person and team of workers protection in healthcare organizations, it turns into vital to often check the KAP of healthcare people in the direction of contamination manipulate measures in order that suitable and well-timed preventive and corrective movements

may be taken to make sure excessive exceptional of healthcare offerings to all of the stakeholders of healthcare organization.

CHAPTER 2
LITERATURE REVIEW

In this chapter, a high-level view of present literature at the Hospital-obtained contamination and factors associated with information, mind-set, and practices of nurses in contamination prevention and manipulate is presented. Due to restrained research carried out in Africa in this topic, the researcher determined to increase the literature evaluation to different continents. Broadening the literature evaluation to different continents enabled the researcher to acquire the modern and up to date statistics at the topic. Furthermore, the literature evaluation confirmed that contamination prevention and manipulate and hospital-obtained infections aren't most effective a hassle in Africa however additionally influence evolved nations as indicated withinside the evaluation. The evaluation consists of applicable study's findings on information, mind-set, and exercise of nurses in contamination prevention and manipulate. The cause of the literature evaluation changed into to recognize what's presently regarded approximately information, mind-set, and practices of nurses in contamination prevention and manipulate. The function of nurses in contamination prevention and manipulate, in addition to the effect of insufficient information in contamination prevention, have been blanketed withinside the literature evaluation. Furthermore, the effect of terrible and high-quality attitudes toward contamination prevention and manipulate and nurses' information of the code of behavior concerning contamination prevention and manipulate changed into reviewed too.

The researcher diagnosed key phrases and variables in this example knowledge, mind-set and practices in contamination prevention and manipulate amongst nurses to carry out a literature review. Electronic databases consisting of PubMed turned into used to look for applicable articles and journals to carry out a literature review. Textbooks in addition to on-line articles have been used to carry out a literature review.

Health-acquired conditions (HACs) are complications that originate from a live in a medical or clinic facility. Hospital-received infections also are referred to as nosocomial infections. Hospital-received contamination is a contamination reduced in size with the aid of using the

affected person whilst receiving care in a health center however now no longer visible on the time of admission. Hospital-received infections are the primary mission for low and middle-earnings nations with insufficient fitness-care resources. Health- care related infections (HAI) is a first-rate global protection challenge for each sufferer and fitness-care professionals. Risk elements consist of loss of right fitness care centers along with isolation units, sinks, mattress space; suitable waste management, decontamination of system and hand hygiene centers. According to McQuoid-Mason (2012), clinic received infections may also increase from surgical operations, urinary catheter, vital strains, and endotracheal tubes in intubated sufferers. According to Khan et al. (2015), organisms which might be often concerned in clinic-received infections consist of Streptococcus spp., Acinetobacter spp., enterococci, Pseudomonas Aeruginosa, Coagulase-bad staphylococci, Staphylococcus aureus, Bacillus cereus, Legionella and Enterobacteria own circle of relative's members. These micro-organisms may be transferred from individual to individual, surroundings and infected water and food, inflamed individuals, infected fitness care personnel's pores and skin or touch thru shared objects and surfaces. According to NICE (2014), Health care related infections can increase both due to fitness care intervention (along with clinical or surgical treatment) or from being in touch with a fitness care setting. They can get worse present day or number one conditions, boom the period of clinic live and boom mortality rates. Unnecessary and unsuitable use of broad-spectrum antibiotics, mainly in fitness care settings, is raising nosocomial contamination. Nosocomial infections may be averted with the aid of using training hand hygiene, figuring out sufferers prone to nosocomial infections and following fashionable precautions to lower transmission. Infection prevention in unique subset sufferers – burns sufferers, consist of figuring out the supply of the organism, identity of organisms, isolation if required, early elimination of necrotic tissue, prevention of tetanus, early nutrients, and surveillance.

Infection-associated illnesses defines infectious ailment as situations as a result of bacteria, viruses, fungi or parasites. Some infectious illnesses may be exceeded from one character to the alternative whilst others are received via way of means of eating infected food. According to Mandal (2012), Staphylococcus is one of the 5 maximum not unusual place reasons of contamination following harm or surgical procedure and it influences round 500,000 sufferers in American hospitals annually. The unfold of Staphylococcus aureus (S. Aureus) is thru air

droplets and via direct touch with items which might be infected with the bacteria. Mandal (2012) states that S. Aureus may be avoided via way of means of looking at excellent hygiene and ordinary hand hygiene. Moreover, the deadly stress Methicillin Resistance Staphylococcal Aureus can also be avoided from spreading via way of means of adopting right hand washing habits. Infection-associated illnesses have unfavorable medical and monetary consequences. As indicated, sufferers who gather Multidrug Resistance Pseudomonas aeruginosa appear to have an elevated dying price and duration of sanatorium stay. The maximum not unusual place varieties of nosocomial infections are surgical wound infections, breathing infections, genital-urinary infections, and gastrointestinal contamination. According to Pasquale, Aliberti, Mantero, Bianchini and Blasi (2016) sanatorium received pneumonia is a common motive of nosocomial contamination with mechanical air flow demonstrating the primary threat component mainly ventilator-related pneumonia. Central line-related blood circulate infections Central venous catheters (CVCs) are accessed strains which might be inserted into the critical veins like femoral, subclavian, and inner jugular veins. CVCs can cause life- threatening sepsis. Recommendations have been made for catheter-related infections via way of means of who indicated that the foremost regions of emphasis include:

- Education and training health-care personnel caring for the central line.
- Using of aseptic techniques during insertion.
- Use central lines on selected patients.
- Not to keep the central lines longer than necessary.

Catheter-related urinary tract infections:

Catheterization is an aseptic process and a must for handiest be undertaken through health-care employees educated and in a position on this process. Catheter protection is crucial in stopping catheter-related urinary tract infections. According to Loveday et al. (2014), positioning the urine drainage bag beneath the extent of the bladder at the stand that forestalls touch with the ground is recommended. The urinary tract contamination is one of the maximums not unusual place nosocomial infections in sufferers with indwelling urinary catheters. 50% of catheterized sufferers lack documentation on indicators for insertion of urinary catheters. The catheter-related- urinary tract contamination are visible in 20% of sufferers with bacteremia in acute care facilities, and over 50% in long-time period care

facilities. Prasanna and Radhika (2015) assessed the understanding concerning catheter care amongst team of workers nurses; the look at reviewed that handiest 46.7% had ok understanding. In this regard, Opina and Oducado (2014) performed a look at to decide the connection among the extent of understanding and practices of nurses on contamination manipulate withinside the use of the urethral catheter. The look at discovered that nurses have a low degree of understanding and terrible contamination manipulate practices withinside the use of urethral catheters. The look at similarly indicated that nurses' degree of understanding has a referring to their practices on contamination manipulate withinside the use of urethral catheters. Labib and Spasojevic (2013) indicated that assessing the want for catheterization, choosing the best form of catheter, aseptic approach during insertion and catheter care can save you CAUTIs. However, catheterization withinside the Sub-Saharan putting is pretty frequently accomplished the usage of easy instead of aseptic approach which of direction can also additionally result in CAUTI. This is due to the fact now no longer all the important system for catheterization is to be had all of the time in particular in faraway areas.

Surgical site infection after surgery:

The surgical site contamination is described as a contamination visible at the incision web page inside 30 days of surgical procedure or inside three hundred and sixty five days of implant insertion. It is indicated that surgical site infections account for 38 percentage of nosocomial infections. Surgery that entails a cut (incision) withinside the pores and skin can cause a wound contamination after surgical procedure. It is crucial to tune sufferers after discharge for a time period to make sure that no contamination has occurred. Surgical operations offer possibilities for transmission of contamination among sufferers and health-care people and among sufferers. According to McGaw et al. (2012), the chance of transmission of contamination might also additionally boom in under-advanced and growing international locations via way of means of low compliance with contamination manage regulations and precautions. For maximum sufferer's present process clean- infected surgeries (cardiothoracic, gastrointestinal, orthopedic, vascular, gynecologic), a cephalosporin is the encouraged prophylactic antibiotic. It was assessed the effectiveness of the usage of preoperative bladder irrigation with 1% povidone-iodine in

decreasing publish transversal prostatectomy surgical site infections (SSIs). The examine reviewed that irrigating the bladder with 1% povidone-iodine ended in good sized discount in publish-prostatectomy surgical site contamination. It became obvious that withinside the manage organization 15 out of sixty five sufferers advanced SSI whilst withinside the examine organization, 6 out of sixty five sufferers advanced SSIs. It was also indicated that over 50% of nurses who participated withinside the survey lacked information approximately surgical web page contamination prevention and practiced inappropriately. According to Abbas and Pittet (2016), SSI is a main motive of health-care related infections this is why surveillance of SSI must be a concern for contamination manage programmes even in resource-restricted settings.

Infection prevention & control:

According to Ojulong, Mitonga and Lipinge (2013), contamination manage practices are geared toward decreasing the occurrence of nosocomial infections. They evaluated understanding and attitudes of contamination prevention and manage amongst fitness technological know-how college students on the University of Namibia. The have a look at found out that understanding approximately contamination prevention and manage and consciousness of its significance amongst fitness technological know-how college students turned into poor. It turned into consequently concluded that severe efforts are had to enhance or evaluation curriculum in order that fitness technological know-how college students' understanding on contamination prevention and manage is imparted early, earlier than they're added to the wards.

Primary prevention & control:

Primary prevention is a manner of stopping sickness in addition to damage earlier than it occurs. Preventing (risks main to damage and sickness are examples of number one prevention. The examples of number one prevention consist of schooling approximately wholesome and secure habits (hand hygiene) and immunization in opposition to infectious diseases. In this regard, CDC (2016) suggests that fitness-care employees influenza vaccination is critical to save you getting and spreading the contamination. Influenza can effortlessly unfold from man or woman to man or woman, together with from fitness-care employees to sufferers. WHO (2010) considers standard immunization to be the only safety measure in opposition to sickness caused through contamination with Hepatitis B. Unsafe injection practices can bring about transmission of an

extensive kind of pathogens, together with viruses, bacteria, fungi and parasites (WHO, 2010). Safe injection exercise is a number one intervention for prevention of transmission of contamination. Therefore, in line with the WHO (2010), a secure injection does now no longer damage each the recipient and the issuer and does now no longer damage different human beings while disposed. In order to make choices approximately movements had to manipulate the threat and save you the unfold of contamination, threat evaluation is performed (Advisory Committee on Dangerous Pathogens-ACDP, 2015). This consists of implementation of sensible contamination manipulate measures, facts provision, schooling, and fitness surveillance (ACDP, 2015). Hand Hygiene is every other degree that promotes number one contamination prevention. CDC's Clean Hands Count marketing campaign ambitions at enhancing adherence at hand hygiene tips amongst medical experts and empowers sufferers to play a function through reminding medical experts to carry out hand hygiene (CDC, 2016). Primary prevention can be done through processes supposed to uphold trendy fitness and welfare of human beings (Salama, 2015). Salama (2015) states that Protection in opposition to occupational risks are number one prevention, for instance, secure managing of sharps through using the sharps box. Encouraging sufferers and fitness- care employees to recognize their HIV fame in order to lessen their publicity to TB contamination study is every other instance of number one contamination prevention. Educating all body of workers on TB transmission and prevention is number one contamination prevention. Service vendors ought to make certain that they have got antimicrobial stewardship tasks in place, together with neighborhood antibiotic formularies for antibiotic prescribing, that is to try and lessen the trouble of antibiotic resistance (NICE, 2014).

Secondary prevention and control:

Secondary prevention objectives to reduce the bearing of ailments or harm that has already happened. By detecting and treating sickness or harm as quickly as possible, in addition to encouraging private techniques to save you re-harm the effect of the sickness is reduced. Use of private shielding gadget and suitable air flow are excellent examples of secondary contamination prevention in addition to Isolation of sufferers with TB, fast diagnostic assessment and fast initiation of treatment (T.B 4, 2015). Patients with TB are recommended to prevent smoking and limit consumption of alcohol in order to lessen the effect of the sickness (T.B 4, 2015). Paryford (2015) indicated that sufferers have to be told to observe the pointers for breathing hygiene and

cough etiquette with the aid of using; - Using a disposable, unmarried use tissue to cowl mouth and nostril whilst coughing, sneezing, wiping or blowing nostril. - Dispose of tissues right away in a bin. - Practice hand hygiene with the aid of using washing palms with cleaning soap and water, and drying them very well after coughing, sneezing or the usage of tissues. Maintenance of an indwelling catheter is any other instance of secondary contamination prevention. NICE hints (2012) suggest that indwelling catheters have to be related to a sterile closed urinary drainage device or catheter valve. The urine drainage bag has to be underneath the extent of the bladder and have to know no longer keep in touch with the floor. The urine bag has to regularly be emptied sufficient to hold urine waft and save you reflux. Urine samples should be acquired from a sampling port the usage of an aseptic method and the meatus have to be washed every day with cleaning soap and water as a part of ordinary every day private hygiene (NICE hints 2012).

Tertiary prevention and control:

Tertiary prevention pursuits to lessen the have an impact on of an ongoing ailment or damage that has huge effects. This is carried out with the aid of using assisting humans address long-term, often hard situations and injuries (e.g. continual diseases, everlasting impairments) on the way to extend as plenty viable their functionality to feature, the fee of existence and their existence expectancy. T.B 4 (2015) states that BCG vaccination does now no longer forestall contamination with T.B however it does forestall extreme kinds of early life T.B and for this reason may be taken into consideration tertiary prevention. All HIV- inflamed people are liable to a big range of opportunistic infections and are at better chance to pathogenic organisms that plague the overall population. Prevention of opportunistic infections in sufferers with HIV ailment is vital to optimize outcome. According to Haburchak (2016), all HIV-associated infections and malignancies amplify in frequency and morbidity because the absolute CD4 T-lymphocyte matter falls closer to two hundred cells/l1/4L and below. HIV sufferers need to be privy to their CD4 matter and their chance of unique infections. A vital feature of contamination manipulate and medical institution epidemiology packages is the prevention of ailment transmission. Infection prevention is achieved via surveillance, outbreaks, schooling, and schooling of fitness care vendors and instituting powerful HAI prevention.

Nurses role in infection prevention and control:

Using their contamination manipulate training, nurses play a critical position in growing a way of life of affected person safety. According to Stone (2013), nurses are at the front strains and might take the cause provide an explanation for contamination manipulate approaches to the sufferers. According to NACNS (2013), studies and demonstration responsibilities have proven that the scientific nurse specialist's (CNS) position is distinctively acceptable to guide the execution of evidence-primarily based totally excellent improvement moves that still reduce price at some point of the fitness care system. The CNS has a crucial component to play in care business enterprise and transitions of care that bring about decreased medical institution duration of stay, fewer medical institution readmissions and less nosocomial conditions (NACNS, 2013). The position of the expert nurse in stopping medical institution-received infections is sizeable. The nurse is a member of a fitness-care group who leads the relaxation of the institution in appearing prevention strategies to preserve the affected person from contamination. However, Hakim, Mohsen and Bakr (2014) discovered that housekeepers had been extensively extra informed than physicians or nurses approximately medical institution regulations and structures for waste disposal, however much less so approximately precise info of disposal. Housekeepers additionally had the best average rankings for attitudes to waste disposal amongst nurses and physicians. Health care-related contamination is a distinguished hassle amongst sufferers in pediatric extensive devices as it may bring about sizeable morbidity, extended hospitalization and an growth in hospital treatment costs. According to Yasmine et al. (2014), who assessed the impact of fitness training application concerning contamination manipulate measures on nurse' know-how and mind-set in pediatric extensive care devices said that the position of nurses is crucial in stopping risks and sequels of fitness care-related infections. The have a look at concluded that there may be a scope for development in know-how and mind-set after the instructional application became presented to the nursing staff. All nurses, in all roles and settings, can display management in contamination prevention and manipulate via way of means of the usage of their know-how, knowledge and at once follow choices to begin suitable interventions. The fitness-care employees should recognize the numerous measures for his or her protection. They need to enhance the business enterprise of work, enforce preferred precautions and eliminate biomedical waste well to save you occupational publicity. Health-care employees need to get themselves immunized in opposition to Hepatitis B and record unintended publicity

to infectious samples to the contamination manipulate committee. Nurses play a key position in contamination prevention, the fitness, and well- being in their sufferers and the economic fitness in their employers.

Housekeeping staff role in infection prevention and control:

Now extra than ever, an easy and sanitary affected person surroundings is being measured as a aspect of contamination prevention and manage process. In addition, final results measures together with affected person pleasure and cleanliness of the surroundings are not unusual place metrics in this period of chronic fitness care reform. In addition shows that patients, site visitors and fitness care vendors mechanically contaminate fitness care environments via day by day activities. This can growth the chance of contamination transmission. According to Weber, the tainted floor surroundings in hospitals performs an essential function withinside the transmission of pathogens like Methicillin-Resistance Staphylococcus Aureus (MRSA) and Clostridium Difficile. In addition shows that admission to a room formerly occupied via way of means of a affected person with MRSA and C.difficile will increase the chance for the following affected person admitted to the room to accumulate the pathogen. Therefore, progressed floor cleansing and disinfection of room surfaces decreases the chance of fitness-care related infection. Hygiene and environmental cleansing are essential in assisting to govern the unfold of contamination. The experimental research at the survival of respiration pathogens advises that, relying at the organism, the sort of floor and the natural fabric load, they are able to live to tell the tale for a restricted time withinside the surroundings.

CHAPTER 3
METHODOLOGY

Research design:

The quantitative descriptive study layout was done. 70 healthcare providers were included in the study (nurses and housekeeping staff). Contents of the questionnaire includes demographical variables, knowledge, attitude and practice of infection prevention measures taken in the hospital.

Research question:

- How knowledgeable are the staff (nurses and housekeeping) of the hospital about infection prevention practices?
- What is the attitude of the staff towards infection control measures?
- What are the practices amongst the nurses and housekeeping staff of the hospital under study?

Population sampling:

The populace is all factors that meet certain standards for inclusion in a observe. The populace for the observe changed into nurse and residence retaining group of workers running in medical surroundings at a personal medical institution in Bhubaneswar, Odisha. The pattern is a subgroup of the populace this is designed for a observe. The pattern set for this observe is 70. The sampling approach that changed into applied on this observe changed into SSRS. This approach of sampling enabled the observe populace to have an same and impartial risk of acting withinside the observe pattern.

Inclusion criteria:

The inclusion standards turned into nurses and home tasks group of workers operating on the non-public sanatorium withinside the city location of Bhubaneswar. All the nurses and home tasks group of workers operating in scientific surroundings have been blanketed withinside the

look at due to the fact it's miles withinside the scientific surroundings in which transmission of contamination occurs.

Exclusion Pattern:

Nursing manager/ superintendent and housekeeping manager are excluded because they do not practice in clinical environment as they spend most of their time in offices performing administrative work.

Instrumentation:

A questionnaire is a report containing questions and different styles of objects designed to solicit statistics suitable for analysis. In this study, we have applied a self-evolved based questionnaire with closed-ended inquiries to accumulate facts for the study. The compilation of the questionnaire became achieved via literature review, session with specialists withinside the area of contamination manipulates, the manager and co-manager who supervised the utility of statistics. The questionnaire consisted of 27 closed ended questions. There aren't any open-ended questions. It consisted of a Likert scale of agree (1), disagree (2) to select from, which supplied extra uniformity of responses as such facts became effortlessly processed.

The questionnaire consisted of 4 sections:

1) Demographic
2) Knowledge
3) Attitude
4) Practice

Data interpretation or analysis:

Data analysis is a technique which is used to reduce, organize, and give meaning to data. After completion of the data collection through a questionnaire, data was captured on to an excel sheet and the data analysis was done. By using descriptive and inferential statistics, the data was analyzed and reported as frequency tables and graphically illustrated by using bar charts. Knowledge was scored by the sum of correct responses to knowledge attributes and expressing

as a percentage of the total. Attitudes and practices were also scored in the same way as knowledge by using the more favorable response as correct.

Ethical consideration:

Where research involves the acquisition of material and information provided on the basis of mutual trust, it is essential that rights, interests and sensitivities of those studied be protected.

a) Right to confidentiality and anonymity
b) Right to self-determination
c) Right to protection from harm and discomfort.

CHAPTER 4

RESEARCH FINDINGS

Biographical Data:

This section aims at collecting participants information's which consists of six questions regarding gender, age, years of experience, and Covid 19 Vaccinated.

I.1: Name:

Consists of name of the participants for identification.

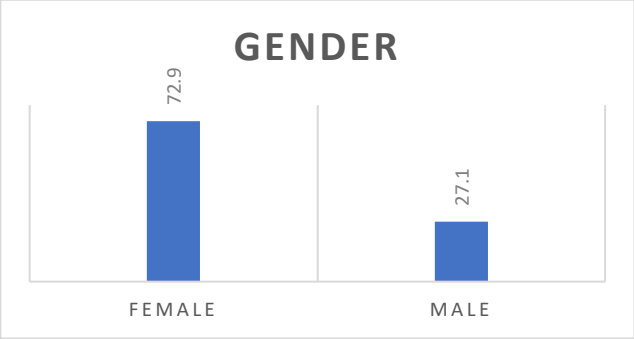
I.2: Department:

Identifies the department the participant belongs to while working in the hospital.

I.3: Gender:

Concerned with the gender of the participant. The majority of the participants who completed the questionnaire were female n= 51 (72.9%) as compared to the male n= 19 (27.1%).

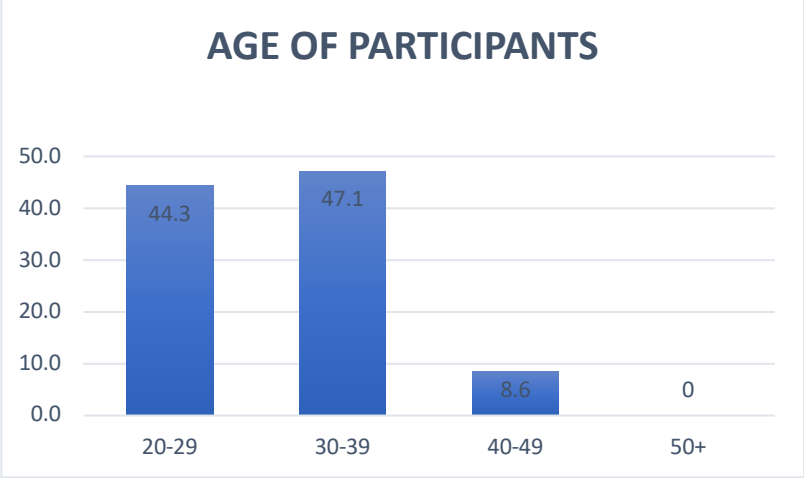
GENDER	NUMBER	PERCENTAGE
Female	51	72.9%
Male	19	27.1%
Total	70	



I.4: Age:

The largest age group that completed the questionnaire were 30-39 years old n=33 (47.1%) followed by an age group of 20-29 years old n=31 (44.3%) and then age group 40-49 years old n=6 (8.6%).

AGE	NUMBER	PERCENTAGE
20-29	31	44.3%
30-39	33	47.1%
40-49	6	8.6%
50+	0	0
Total	70	



I.5: Years of experience:

The number of staff who practiced for 1-5 years n=34 (48.6%) followed by 6-10 years n=19 (27.1%), then 11-15 years n=14 (20%) and lastly, 15+ work experience n=3 (4.3%).

YEARS OF EXPERIENCE	NUMBER	PERCENTAGE
1-5 years	34	48.6%

6-10 years	19	27.1%
11-15 years	14	20%
15+ years	3	4.3%
Total	70	

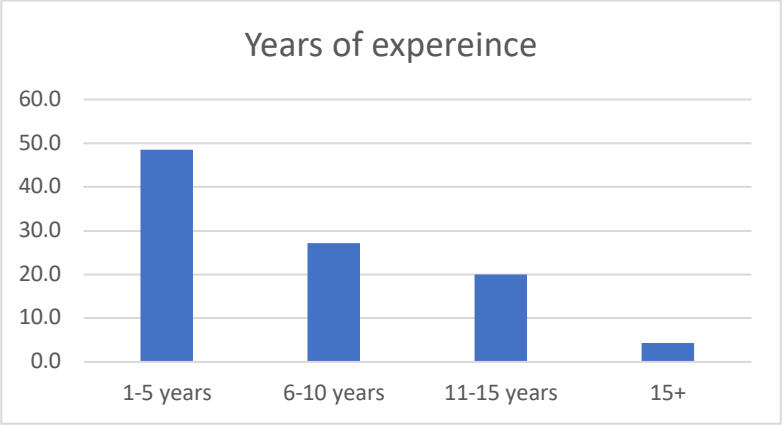


Table II: Questions on nurse's and housekeeping staff knowledge in infection prevention and control

Variable	Agree	Disagree	Total
Hospital acquire infection can be transmitted by medical equipment such as syringes, needles, catheters, stethoscopes, thermometer, etc.	n= 67 (95.7%)	n= 3 (4.3%)	n=70
I know the world health organization's 5 moments of hand hygiene	n= 54 (77.1%)	n= 16 (22.9%)	n=70
Micro-organisms are destroyed by using clean water	n= 8 (11.4%)	n= 62 (88.6%)	n=70
Standard precautions apply to all patients regardless of their diagnosis	n= 58 (82.9%)	n= 12 (17.1%)	n=70

I am familiar with hospital-acquired infection guidelines	n= 62 (88.6%)	n= 8 (11.4%)	n=70
I can handle body fluids with bare hands if gloves are not available	n= 2 (2.9%)	n= 68 (97.1%)	n=70
I know how to prevent and control hospital acquired infections	n= 63 (90%)	n= 7 (10%)	n=70

Interpretation:

II.7: The majority of the staff n= 67 (95.7%) agreed that hospital acquire infections can be transmitted by medical equipment such as syringes, needles, catheters, stethoscopes, thermometers, etc. While a few participants n= 3 (4.3%) disagreed. If staff are knowledgeable in infection prevention and control, the rate of hospital acquired infection can be reduced.

II.8: According to the table, the large majority of staff n= 54 (77.1%) agreed that they were aware of the WHO's 5 moments of hand hygiene, the remaining staff n= 16 (22.9%) disagreed.

II.9: As per the table, the majority n=62 (88.6%) of participants disagreed with the statements that microorganisms are destroyed by clean water, while n= 8 (11.4%) agreed that micro-organisms can be destroyed by clean water. Microorganisms can only be destroyed by disinfectants with anti-microbial properties that can be applied to non-living objects to destroy micro-organisms.

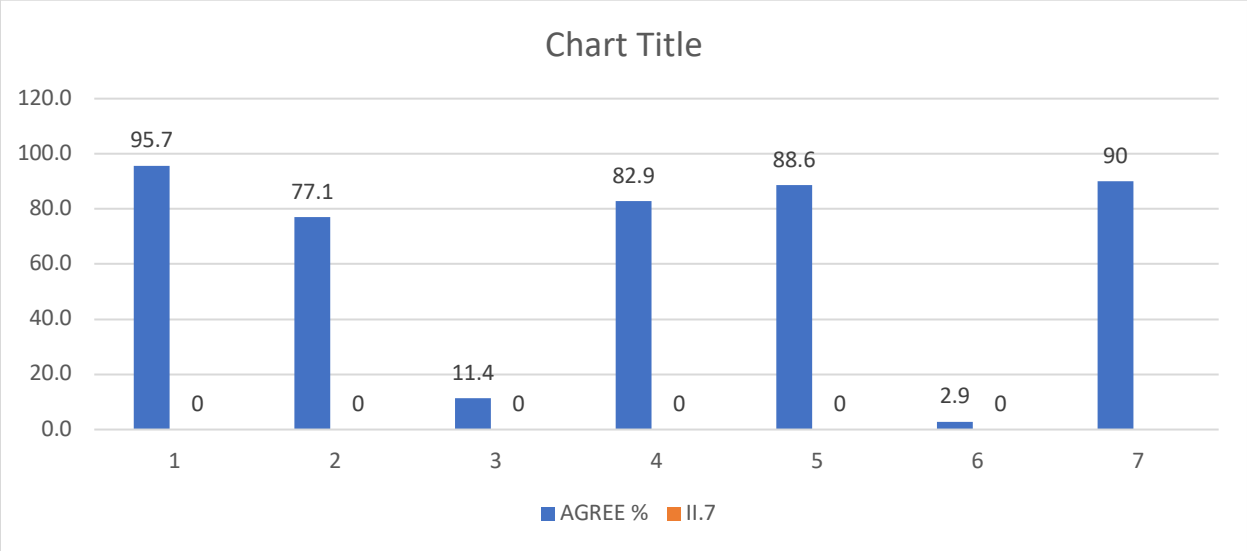
II.10: According to table, a large number of staff n= 58 (82.9%) agreed that standard precautions apply to all patients regardless of their diagnosis. A relatively small number of staff n= 12 (17.1%) disagreed with the statement that standard precaution apply to all patients regardless of their diagnosis.

II.11: As per the table, the majority of participants n= 62 (88.6%) agreed that they were familiar with hospital acquired infection guidelines, whereas some participants n= 8 (11.4%) disagreed that they were unfamiliar with hospital acquired infection guidelines. Infection control guidelines are important because they guide healthcare workers in prevention of hospital acquired infection.

II.12: The results in the table showed that almost all participants n= 68 (97.1%) disagreed with the statement that they can handle body fluids with bare hands if gloves are not available. Unfortunately, n=2 (2.9%) participants agreed that they could handle body fluids with bare hands if gloves are not available.

II.13: Table above showed that a large number of participants n= 63 (90%) agreed that they know how to prevent and control hospital acquired infections whereas only a minority n= 7 (10%) disagreed to know how to prevent and control hospital acquired infections.

Results reflected within the graph below shows the extent of agreement on knowledge among nurses in infection prevention and control



Feedback of responses on the y-axis of the above chart referring to knowledge:

II.7: 95.7% of the staff agreed that hospital acquire infection can be transmitted by medical equipment such as syringes, needles, catheters, stethoscope, thermometers, etc.

II.8: 77.1% of the staff agreed that they know the World health Organization's 5 moments of hand hygiene

II.9: 11.4% agreed that micro-organisms are destroyed by using clean water

II.10: 82.9% of the staff agreed that standard precautions apply to all patients regardless of their diagnosis.

II.11: 88.6% of the staff agreed that they were familiar with hospital acquired infections guidelines.

II.12: 2.9% of the staff agreed that they could. Handle body fluid with bare hands if gloves were not available.

II.13: 90% of the nurses agreed that they knew how to prevent and control hospital acquired infections.

Attitudes questions from III.14 to III.20

Questions on attitudes towards infection prevention and control among nurses and housekeeping staff.

	Variable	Agree	Disagree	Total
III.14	I do not have to wash hands or use sanitizer if I used gloves	n= 5 (7.1%)	n= 65 (92.9%)	n=70
III.15	Policies and procedures on infection control should be adhered to at all times	n=69 (98.6%)	n=1 (1.4%)	n=70
III.16	The workload affects my ability to apply infection prevention guidelines	n=47 (67.1%)	n=23 (32.9%)	n=70
III.17	I feel that needles should be recapped after use and before disposal	n=4 (5.7%)	n=66 (94.3%)	n=70

III.18	Although infection prevention guidelines are important to this hospital, it is not my responsibility to comply with hospital acquired infection guidelines	n=7 (10%)	n=63 (90%)	n=70
III.19	Is it necessary to categorize hospital waste before disposal	n=67 (95.7%)	n=3 (4.3%)	n=70
III.20	Health workers hands are vehicle for transmission of nosocomial pathogen	n=69 (98.6%)	n=1 (1.4%)	n=70

Interpretation:

III.14: According to the table, majority of the staff n= 65 (92.9%) disagreed with the statement that they do not have to wash hands after using gloves. While a relatively small group of staff n= 5 (7.1%) agreed with the statement that that do not wash hands after using gloves. It is important to wash hands with soap and water after removing gloves because there is a risk of hand contamination during removal of gloves.

III.15: Table indicates that the majority of staff n= 69 (98.6%) agreed that they should adhere to policies and procedures on infection control at all times. A few staff n=1 (1.4%) disagreed with the fact that they should adhere to policies and procedures on infection control at all times.

III.16: Tale states that most of the participants n=47 (67.1%) agreed that the workload affects their ability to apply infection prevention guidelines, while some participants n=23 (32.9%) disagreed that the workload affects their ability to apply infection prevention and control. Therefore, decreasing exhaustion among staff is a favorable approach to help control transmission of infections in hospital. Therefore, recommendations were made to improve staffing and alleviate job-related burnout, hence improving the quality of patient care.

III.17: According to the table, majority of the participants n=66 (94.3%) disagreed with the statement that needles should be recapped after use and before disposal. A few participants n=4 (5.7%) agreed with the statement that needles should be recapped after use and before disposal.

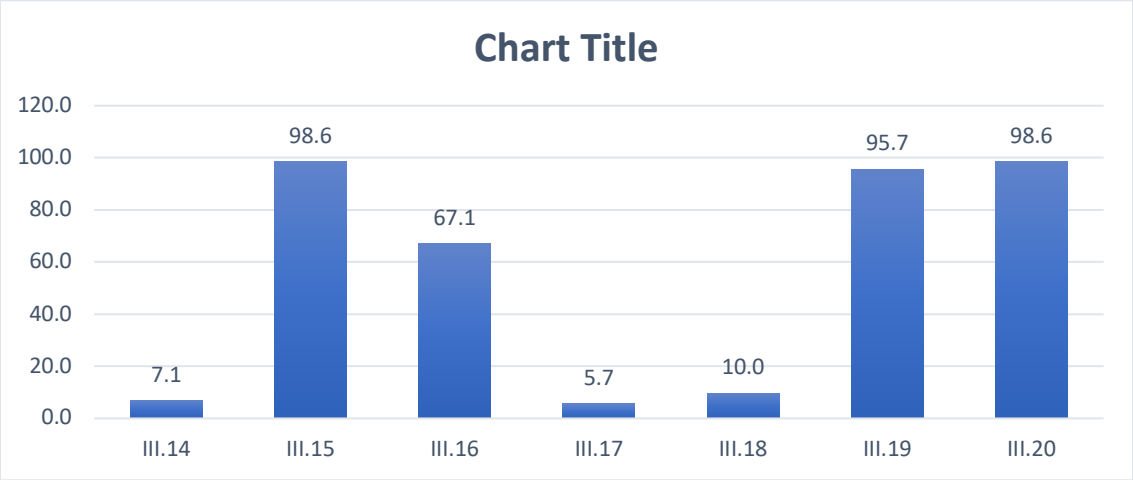
According to OSEH (2010:2-3), recapping needles is a dangerous practice as many accidental needle stick injuries occur when employees are recapping needles. This practice predisposes healthcare workers to infections like HIV and Hepatitis B virus infections.

III.18: As per the table, the large majority of staff n= 63 (90%) disagreed with the statement that it is not their responsibility to comply with the hospital acquired infection guidelines. While some participants n=7 (10%) agreed that it is not their responsibility to comply with the hospital acquired infection guidelines. Transmission of HAIs through healthcare workers can be avoided by complying with HAI's guidelines in order to reduce the rate of HAI's.

III.19: As mentioned in the table, majority of staff n=67 (95.7%) agreed that it is necessary to categorize hospital waste before the disposal process but n=3 (4.3%) disagreed that it is not necessary to categorize the waste before the disposal.

III.20: Table shows that, most participants n=69 (98.6%) agreed that the hands of the health worker are vehicle for transmission of nosocomial pathogens. Whereas one single participant n=1 (1.4%) disagreed that the health worker hands is not a vehicle for transmission of nosocomial pathogens.

The results reflected within the graph below shows the extent of agreement on attitudes among nurses in infection prevention and control:



Feedback of responses on the Y-axis of figure referring to attitudes:

III.14: 7.1% of the staff agreed that they do not have to wash their hands after using gloves.

III.15: 98.6% of staff agreed that policies and procedures on infection control should be adhered at all times.

III.16: 67.1% of the staff agreed that the workload affects their ability to apply infection prevention guidelines.

III.17: 5.7% of the staff agreed that they feel needles should be recapped after use and before disposal.

III.18: 10% of the staff agreed that it is not their responsibility to comply with hospital acquired infection guidelines.

III.19: 95.7% of the staff agreed that it is necessary to categorize hospital waste before disposal.

III.20: 98.6% of the staff agreed that health workers hands are vehicle for transmission of nosocomial pathogen.

Questions on Practices regarding infection prevention and control among nurses:

	Variable	Agree	Disagree	Total
IV.21	Knowledge of infection prevention and control are being monitored in the hospital	n= 66 (94.3%)	n=4 (5.7%)	n=70
IV.22	Hepatitis B vaccination is provided to staff	n=68 (97.1%)	n=2 (2.9%)	n=70
IV.23	Personal protective equipment are always accessible	n= 17 (24.3%)	n=53 (75.7%)	n=70

IV.24	Infection prevention does not improve patient outcome	n=3 (4.3%)	n=67 (95.7%)	n=70
IV.25	We wear personal protective equipment when handling linen of normal patients	n=11 (15.7%)	n=59 (84.3%)	n=70
IV.26	I attend in-service training/workshop related to infection prevention and control yearly	n=69 (98.6%)	n=1 (1.4%)	n=70
IV.27	Wearing masks during handling TB suspected patients	n=67 (95.7%)	n=3 (4.3%)	n=70

Interpretation:

IV.21: Table indicates that most of the participants n=66 (94.3%) agreed that knowledge of infection prevention and control are being monitored in the hospital, while some participants n=4 (5.7%) disagrees that knowledge of infection prevention and control are being monitored in the hospital.

IV.22: According to the table participants n=68 (97.1%) agreed to provision of Hepatitis B vaccinations to the staff after joining the hospital. But few participants n=2 (2.9%) disagreed to availability of Hepatitis B vaccination.

IV. 23: Personal protective equipment (PPE) has to be accessible for staff to comply with infection prevention measures. The table indicates that the majority of staff n=53 (75.7%) reported that personal protective equipment is not always accessible for them to comply with infection prevention measures. Nevertheless, some participants n=17 (24.3%) agreed that personal protective equipment is always accessible.

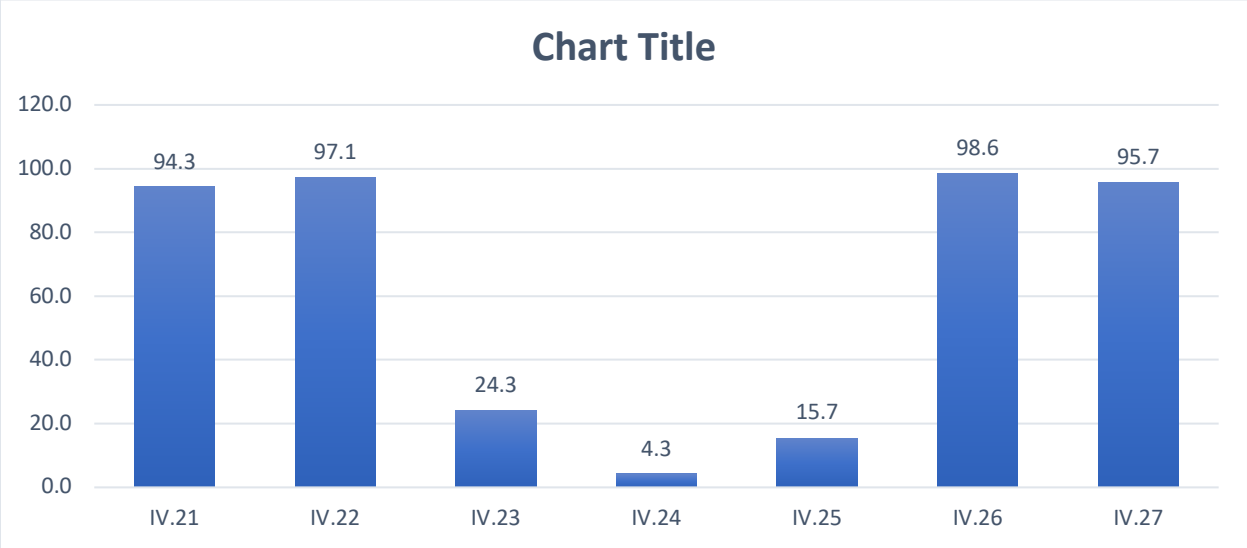
IV.24: The table indicates that the majority of the participants n=67 (95.7%) disagreed with the statement that infection prevention does not improve patient outcome while some participants n=3 (4.3%) agreed with the statement that infection prevention does not improve patient outcome. Literature has shown that infection prevention does not improve patient outcome hence posing a risk for HAIs.

IV.25: According to the table, the majority n=59 (84.3%) disagreed that they do not wear PPE when handling linens while some participants n=11 (15.7%) agreed that they do wear PPE while handling the linens. According to MOH (2013:57), linen may be contaminated by blood, body fluids, etc., therefore, linen poses an infection risk to staff during handling on the ward, during the transport or processing at laundry.

IV.26: As per the table most of the participants n=69 (98.6%) agreed that they attend in-sevice training/workshop related to infection prevention and control yearly. One participant n=1 (1.4%) disagreed to attending the in-service training/workshop related to infection prevention and control yearly.

IV.27: The table indicate that staff n=67 (95.7%) agreed to wearing masks during handling TB suspected patients. Whereas participants n=3 (4.3%) disagreed for wearing masks during the handling of TB patients causing exposing themselves to the risk of spreading.

<u>The results reflected within the graph below shows the extent of agreement on practices towards infection prevention and control among nurses.</u>



Feedback of responses on the y-axis of figure referring to practice:

IV.21: 94.3% of the staff agreed that knowledge of infection prevention and control are being monitored in their hospital.

IV.22: 97.1% of the staff agreed the provision of Hepatitis B vaccination after joining in the hospital.

IV.23: 24.3% of the staff agreed that PPE is always accessible

IV.24: 4.3% of the staff agreed that infection prevention does not improve patient outcome which is correct.

IV.25: 15.7% of the staff agreed that they wear PPE when handling linen.

IV.26: 98.6% of the staff agreed that they attend in-service training/ workshop related to infection prevention and control yearly.

IV.27: 95.7% of the staff agreed that they wear masks while dealing with TB suspected patients.

CHAPTER 5
DISCUSSION, CONCLUSION AND RECOMMENDATION

The aim of the study was to determine the knowledge, attitude and practices of nurses and housekeeping staff with respect to infection prevention and control in a super-specialty hospital. As per WHO, infection-related diseases are still the main cause of death in many parts of the world. According to WHO (2016) a huge gap nonetheless exists among the knowledge collected during the last many years and implementation of contamination manage practices. This gap is even deeper in poor-aid settings with devastating consequences. Every strengthen and funding in health care is undermined via way of means of breaches in infection control measures (WHO, 2016).

The knowledge of the staff indicates that around 89% of the healthcare workers in the hospital were aware of the infection control precautions. Majority of the healthcare staff are aware of the components of infection control precautions, moments of hand hygiene and advantages of the infection prevention and control. Knowledge of the staff was thus assessed to be good with respect to the infection control precautions. The attitude of the staff was seen to be positive from the result obtained from the study. 92.9% staff disagreed to not washing hands or use sanitizer after using gloves. Around 98.6% staff agreed that policies and procedures on infection control should be adhered to at all times. But, as per the study conducted, around 67.1% of the staff agreed that the workload affects their ability to apply infection prevention guidelines which is a major concern factor to be considered. Practice of the staff was found to be good in the study. The comparative study suggests that although, the practices were satisfactory on an overall basis, a scope of improvement through trainings can be obtained for a better result.

The strength of this study is that the survey was conducted from two of the most important department i.e., Nursing and housekeeping who comes in close contact with the patients. Additionally, my tenure in the operation department gave me a bird’s eye view of the compliance with the relevant guidelines in the daily operations of the hospital which immensely helped me to conduct this study.

Considering the results of this study, feedback from both the patients as well as clinicians should be thoroughly analyzed by both operation and quality department so as to keep a check on patient safety and infection control practices by the nurses and housekeeping staff.

Internal and external audits too will be able to help in a certain way to prevent infection. Organizational culture should be made more friendly for every employee as it will be easier for the staff for reporting incidents and seeking timely help from appropriate authority. Learning organization type and a no blame culture environment will motivate people to share knowledge freely among the healthcare providers. Regular interdepartmental meetings should be conducted to discuss, plan and execute plans to promote infection control knowledge, attitude and practices among the healthcare providers.

The discussion in this chapter is conducted using each individual objective and integrating the study findings.

The discussion is based on the following objectives:

- To determine the knowledge of nurses and housekeeping staff in infection prevention and control within a private hospital in Bhubaneswar
- To determine the attitudes of nurses and housekeeping staff towards infection prevention and control within a private hospital in Bhubaneswar
- To determine the practices of nurses and housekeeping staff in infection prevention and control within a private hospital in Bhubaneswar
- To make recommendations to the risk programmed and policies of the super specialty hospital.

Recommendations:

1. To ensure that the resources allocated for infection prevention and control are not deviated to other things and it can be achieved by performing random infection control spot checks of the hospital.
2. The infection control committee should be more proactive so that they will be able to monitor the rate of HAI as well as giving feedback to staffs and relevant authorities.
3. Availability of PPE for the staff should be done when needed, specially while dealing with air-borne risk infected patients.
4. The super specialty hospital should ensure that new members of staff receive in-service training in infection prevention and control as part of induction program, organized in hospital.
5. Increasing manpower to decrease the exhaustion among staff is a favorable approach to help control transmission of infections in hospital. Therefore, recommendations were made to improve staffing and alleviate job-related burnout, hence improving the quality of patient care.

Conclusion:

From the effects obtained, its concluded that majority of the sanatorium body of workers reveals required KAP and follows fashionable practices which can be compliant with the recommendations critical for affected person and body of workers withinside the whole healthcare putting of the sanatorium. Key contamination manipulates precautions like right hand washing strategies with the moments of hand hygiene, secure needle and sharps disposal, HBV immunizations, etc., are effectively practiced through the healthcare employees within side the hospital. However, consciousness of coping with and reporting NSI and right disposal of waste are the 2 regions which canoe similarly advanced Regular trainings and lively audits each scientific and clinical will assist to display and similarly enhance the KAP of the healthcare employees withinside the hospital area of contamination manipulates practices. Proper affected person and staff remarks series and evaluation through the high-satisfactory branch within the hospital might assist to preserve a test on contamination manipulates practices. Mock drills and simulation sporting activities are any other cautioned degree to manipulate and enhance the process.

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QUESTIONNAIRE:

Sample Questionnaire:

I. Demographic

1. Name:

2. Department:

3. Gender:

4. Age:
   20-29
   30-39
   40-49
   49+

5. Years of experience:
   1-5 years
   6-10 years
   10-15 years
   15+

6. Are you COVID-19 vaccinated:
   Partially
   Fully
   Not vaccinated

II. Knowledge:

7. Hospital acquired infection can be transmitted by medical equipment such as syringes, needles, catheters, stethoscopes, thermometer, etc. (Agree)

- Agree
- Disagree

8. I know the world's health organization's 5 moments of hand hygiene (Agree)

- Agree
- Disagree

9. Micro-organisms are destroyed by using clean water (Disagree)

- Agree
- Disagree

10. Standard precautions apply to all patients regardless of their diagnosis (Agree)

- Agree
- Disagree

11. I am familiar with hospital-acquired infection guidelines (Agree)

- Agree
- Disagree

12. You can handle body fluids with bare hands if gloves are not available (Disagree)

- Agree
- Disagree

13. I know how to prevent and control hospital acquired infections (Agree)

- Agree
- Disagree

III. Attitudes:

14. I do not have to wash hands if I used gloves (Disagree)

- Agree
- Disagree

15. Policies and procedures on infection control should be adhered to at all times (Agree)

- Agree
- Disagree

16. The workload affects my ability to apply infection prevention guidelines (Agree)

- Agree
- Disagree

17. I feel that needles should be recapped after use and before disposal (Agree)

- Agree
- Disagree

18. Although infection prevention guidelines are important to this hospital, it is not my responsibility to comply with hospital acquired infection guidelines (Disagree)

- Agree
- Disagree

19. Is it necessary to categorize hospital waste before disposal.

- Agree
- Disagree

20. Health workers hands are vehicle for transmission of nosocomial pathogen.

- Agree
- Disagree

IV. Practices:

21. Knowledge of infection prevention and control are being monitored in the hospital (Agree)

- Agree
- Disagree

22. Hepatitis B Vaccination is provided to staff (Agree)

- Agree
- Disagree

23. Personal protective equipment are always accessible (Disagree)

- Agree
- Disagree

24. Infection prevention does not improve patient outcome (Disagree)

- Agree
- Disagree

25. We wear personal protective equipment when handling linen normal patients (Disagree)

- Agree
- Disagree

26. I attend in-service training/workshop related to infection prevention and control yearly

- Agree
- Disagree

27. Wearing masks during handling TB suspected patients.

- Agree
- Disagree