

## A Study of Awareness of Sterile Dressing Techniques among Interns in a Tertiary Teaching Medical College Hospital.

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### **Abstract:**

**Background:** Hospital acquired infection is the major problem in health care service worldwide. They become the cause for morbidity and mortality. Almost 10% of hospitalised patients would develop infection during their stay at the health service centres. Aseptic technique is a standard healthcare technique that helps in preventing hospital acquired infections.<sup>[1]</sup>

**Materials and Methods:** A Descriptive study among the Interns of Sri Lakshmi Narayana Institute of Medical Sciences which is a teaching hospital in Pondicherry using Questionnaire through Google Forms.

**Results:** Majority of the study group (95.7%) are aware of the aseptic techniques performed in hospital environment. But to the contrary, only 18.6% of the study group had received a formal in-service training for sterile dressing techniques from various resources.

**Key Word:** aseptic techniques, surgical wound dressing, health care professionals, surgical wound infection, awareness.

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### **I. Introduction**

Hospital acquired infection is the major problem in health care service worldwide. They become the cause for morbidity and mortality. Almost 10% of hospitalised patients would develop infection during their stay at the health service centres. The main culprit of this scenario would be due to contaminated hands of health care givers who evaluate each patient would spread from one to other.

Standard aseptic precautions are set of formulated measures to prevent spread of blood borne diseases when providing health care. Compliance with standard aseptic precautions reduces the risk of exposure to blood and body fluid components. Standard precautions include use of proper hand hygiene; use of gloves, gown, cap and mask; care with surgical devices, environmental control (biomedical waste handling); adequate discarding of sharp instruments; and patient's accommodation in accordance to their requirement levels as a source of infection. The most important among the standard precautions advocated is hand hygiene. Adoption of safe practices for handling needle sticks and others sharp objects are also recommended in view of the possibility of outbreaks, especially of HIV & Hepatitis B & C.

The probability of developing HAIs is higher among critically ill patients who are vulnerable to infections. The presence of multiple invasive devices for treating or monitoring the care of such patients makes them vulnerable to common nosocomial infections like urinary tract infection (UTI), respiratory tract infection (RTI) etc.,

A study showed that practice of hand hygiene among healthcare workers is generally low. Furthermore, several studies done to assess the knowledge attitudes and compliance and reasons for Non-adherence to hand hygiene guidelines revealed that compliance with hygiene protocols by healthcare workers is poor. This study is being conducted to assess the knowledge awareness and compliance with universal precautions among healthworkers in Sri Lakshmi Narayana Institute of Medical Sciences which is a teaching hospital in Pondicherry.

## II. Material And Methods

We conducted a descriptive study among the Medical Interns of Sri Lakshmi Narayana Institute of Medical Sciences which is a teaching hospital in Pondicherry. We were permitted by the administration to do the study. We explained the purpose of our study to the participants when we approached them and obtained their consent before beginning the study. The study population consisted of 70 medical interns doing internship in that hospital.

**Study Design:** Prospective descriptive study

**Study Location:** This was a tertiary care teaching hospital based study done in Department of surgery, *Sri Lakshmi Narayana Institute of Medical Sciences- PUDUCHERRY / BIHER, INDIA.*

**Sample size:** 70 CRRI

### Inclusion criteria:

1. Interns who have completed their surgery rotational internship.
2. Both female and male

### Exclusion criteria:

1. Medical interns who have not completed surgery rotation
2. Health care professionals who are doing infected surgical wound dressing

### Procedure methodology

The data collection was done in April and May 2020. We explained the purpose of our study to the participants when we approached them and obtained their consent before beginning the study. We had constructed a questionnaire through **Google Forms** for the participants to fill.

We used participative and non-participative questionnaire technique to know the level of practice for aseptic techniques on surgical wound dressing by medical interns. If the step was correctly performed, one score was given and zero score for the steps that were not followed. The questionnaire was designed as such to test their awareness and knowledge on sterile dressing technique. The questions are regarding steps taken before, during and after the procedure of sterile dressing.

The participants identity was not revealed throughout the observation. The collected data was analysed on percentage basis to find out the practice of aseptic techniques on surgical wound dressing among Interns.

### Statistical analysis

The parameters observed were recorded on the check list corresponding to the practice aspects which were evaluated during the knowledge assessment phase. The data from the questionnaire were coded and entered into a computerized data base and analysed using *SPSS*, version 17.

## III. Result

**Fig.1 Distribution of Medical Interns according to Study Variables**

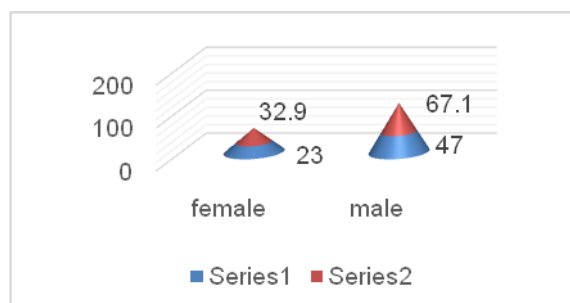


Figure 1 revealed that, out of 60 sample, 23(32.9%) of the medical interns were Female and 47(67.1%) of the medical interns were Male.

**Table 1: Frequency and percentage distribution of Medical Interns according to their awareness on aseptic techniques & whether they received in-service training**

	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Are you aware of the aseptic techniques performed in hospital environment?	67	95.7	3	4.3
Have you received any formal in-service training for sterile dressing technique?	13	18.6	57	81.4

**Table 1** revealed that in the research group, 95.7% of the study group are aware or aseptic techniques, whereas 4.3% unaware of the techniques. But, only 18.6% have received formal in-service training whereas 81.4% don't.

**Table 2: Frequency and percentage distribution of Medical Interns according to their practice before the surgical wound dressing**

Before the procedure	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Do you know that you should use curtains to provide privacy to the patients	64	91.4	6	8.6
Do you know that you should use curtains to provide privacy to the patients during dressing?	69	98.6	1	1.4
Do you know that you should place the patients comfortably with easy access to the wound?	66	94.3	4	5.7
Do you know that you should arrange all needed equipment near bedside?	66	94.3	4	5.7
Are you aware of the practice of checking expiry date of dressing pack and cleaning solution each time?	43	61.4	27	38.6
Do you know that you should place unsterile objects away from sterile field?	69	98.6	1	1.4
Do you know that you should place sterile dressing tray on clean and dry trolley?	67	95.7	3	4.3
Do you know that you should place waterproof pad/sheet under wound site?	61	87.1	9	12.9
Do you know that you should switch off the fan before dressing?	21	30	49	70
Do you know that you should remove your watch/ring before handwashing?	64	91.4	6	8.6
Do you know that you should wash your hands with soap for 40-60sec and rub with alcohol-based solution for 20-30sec?	57	81.4	13	18.6
Do you know that you should wear face mask before the procedure?	57	81.4	13	18.6

**Table 3: Frequency and percentage distribution of Medical Interns according to their practice during the surgical wound dressing**

During the procedure	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Are you aware of the practice of opening the glove pack without touching the wrapper inside?	64	91.4	6	8.6
Do you know that you should avoid contact of outer surface of sterile pack with any other surface other than trolley?	57	81.4	13	18.6
Do you know that you should hold dressing solution 6 inch above sterile container?	47	67.1	23	32.9
Do you know that you should drop sterile articles gently to sterile field without touching any other particles?	61	87.1	9	12.9
Do you know that you should not touch the sterile area	70	100	0	0

using bare hands?				
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**Table 4: Frequency and percentage distribution of Medical Interns according to their practice after the surgical wound dressing**

After the procedure	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Do you know that you should place the patient back in comfortable position, by removing used dressing & equipment from bedside?	61	87.1	9	12.9
Do you know that you should dispose soiled dressing in yellow bin and tubing in red bin?	65	92.9	5	7.1
Do you know that you should wash reusable articles before sending it for sterilization?	48	68.6	22	31.4
Do you know that you should wash the hands for 40-60 seconds, dry the hands and rub well with alcohol with 20-30 seconds?	59	84.3	11	15.7
Are you aware of the practice of documenting the procedure's date & time, nature of wound & drainage, solution used for the dressing and patient's condition?	59	84.3	11	15.7

Analysis showed that majority of the study group (95.7%) are aware of the aseptic techniques performed in hospital environment. But to the contrary, only 18.6% of the study group had received a formal in-service training for sterile dressing techniques from various resources.

Majority of the study group knew about the necessary steps to follow before the wound dressing procedure. But, only 30% knew that they should switch off the fan before dressing. Less than 2/3<sup>rd</sup> of the study group (61.4%) knew that they should check the expiry date of dressing pack every time, which is quite significant in an institutional setup. More than half of the population have good knowledge on aseptic wound dressing procedure. However, 32.9 % of the study group doesn't know that they should hold dressing solution 6 inch above the sterile container.

Post-dressing procedure almost everyone has adequate knowledge on what to do, except for the 31.4% of the medical interns, who didn't know that they should wash the reusable articles before sending it for sterilisation and 15.7% were unaware of the fact that they should wash hands for 40-60 seconds and rub with alcohol for 20-30 seconds and also they should document the procedure they followed with adequate details.

#### IV. Discussion

In our study, we found out that more than 95% of Medical interns are found to be aware of aseptic dressing techniques. Though only 18.7% have only received a formal in-service training regarding STERILE DRESSING TECHNIQUES.

Hand hygiene is the initial step towards successful infection control in any healthcare setup.

Most of the study group knew about the necessary steps to follow before the wound dressing procedure. But, only 30% knew that they should switch off the fan before dressing. Less than 2/3<sup>rd</sup> of the study group (61.4%) knew that they should check the expiry date of dressing pack every time, which is quite significant in an institutional setup. More than half of the population have good knowledge on aseptic wound dressing procedure. However, 32.9 % of the study group doesn't know that they should hold dressing solution 6 inch above the sterile container. This is in correlation with the article "**The Practice of Aseptic Techniques on Surgical Wound Dressing By Health Care Professionals**".

Post-dressing procedure almost everyone has adequate knowledge on what to do, except for the 31.4% of the medical interns, who didn't know that they should wash the reusable articles before sending it for sterilisation and 15.7% were unaware of the fact that they should wash hands for 40-60 seconds and rub with alcohol for 20-30 seconds and also they should document the procedure they followed with adequate details. And this response was in supportive of the article "**Aseptic Wound Dressing Practices among Nurses**". It is necessary to have a formal in-service training regarding the aseptic dressing techniques for all the interns rather than learning from trail and error or other resources. It is essential in preventing surgical site wound infections& other hospital care acquired infections.

#### V. Conclusion

Aseptic technique is a standard set of healthcare practices that aim to eliminate the risk of surgical site infections. The proper use of aseptic technique should prevent Healthcare acquired infection, which are a significant healthcare concern than can lead to consequences for both patients & healthcare facilities.

The present study revealed that majority of the medical interns had moderately adequate level of knowledge of aseptic techniques on surgical wound dressing. Therefore, the study concluded that there is a need for continuous education of aseptic techniques on surgical wound dressing among medical interns to improve their practices.

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