

# EFFECTIVENESS OF TEACHING ON INFECTION CONTROL PRACTICES AMONG HEALTH CARE PROFESSIONALS

*Mrs. Meenakshi Gijare*

Associate Professor, Symbiosis College of Nursing, Pune.



## Introduction

Infection Control practices has been an area of major concern in healthcare industry. Though there is a great progress in the field of public health & healthcare industry per say, infections continue to develop in hospitalized patients and may also affect hospital staff. Many factors like decreased immunity among patients; the increasing variety of medical procedures and invasive techniques creating potential routes of infection and the transmission of drug-resistant bacteria among crowded hospital populations are responsible for the promotion of infection among hospitalized patients. Poor infection control practices may facilitate transmission of microorganisms from one patient to another. Therefore, the need to follow proper infection control guidelines becomes necessary.

As healthcare industry is growing there are many challenges that are mushrooming. On one side there is a great demand for aesthetics and on the other side there is a tremendous challenge to minimize the nosocomial infections. Turnover of nursing staff is the major area of concern in any part of the world, which leads to increased need for repeated training & better surveillance. High attrition rate of 20-25% among nurses leads to the

increased requirement of training despite of the fact that standard protocols are readily available. Inadequate nurse patient ratio leading to increased burden of workload among nurses is another cause of poor compliance to infection control protocols. This leads to innovation by nurses to various short cuts leading to poor infection control practices giving rise to spread of infections. *Therefore a need was felt to do a study on health care professionals' knowledge & practices regarding infection control protocols.*

Healthcare associated infections are a very costly affair for any healthcare agency as it increases the length of stay of the patient, increased suffering & very huge pinch to the pocket of the patient resulting in loss of trust and confidence in healthcare facility. This also brings the fear of defaming to the organization. At any time about 1.4 million people worldwide suffer from HCAI & the risk of HAI is 2-20 times higher in developing countries with overall incidence of HAIs is about 10%.<sup>(1)</sup>

### *WHO defines Nosocomial Infections as*

*'An infection acquired in hospital by a patient who was admitted for a reason other than that infection'<sup>(2)</sup>.*

*According to Centers for Disease Control and Prevention (CDC)*

Healthcare-associated infections (HAIs) are infections caused by a wide variety of common and unusual bacteria, fungi, and viruses during the course of receiving medical care.<sup>(3)</sup>

A decade ago in India one out of every five hospitalized patients suffered from HAI whereas the same was approximately 1 out of every 20 hospitalized patients in United States.<sup>(1)</sup>

It has been widely recognized that education and awareness play a vital role in increasing the level of compliance among healthcare personnel. Also, if feedback of the impact of education is provided, appropriate interventional measures can be taken to further improve knowledge, attitude and practices to improve compliance to infection control practices, therefore a this study was undertaken.

**Problem Statement**

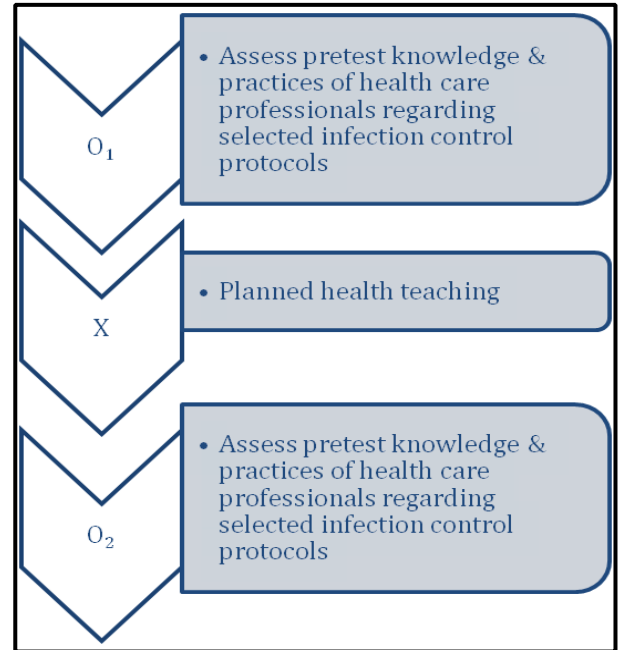
‘To assess the Effectiveness of planned health teaching on the reinforcement of the knowledge & practices of health care professionals regarding selected infection control protocols: A case study of a tertiary care hospital in Pune’

**Objectives:**

1. To assess the knowledge of Health Care Professionals about infection control practices before & after administration of planned health teaching
2. To observe the practices of Health care professionals about infection control practices before & after administration of planned health teaching
3. To compare the effectiveness of planned health teaching.

4. To compare the knowledge and practices with regards to selected variables such as – Gender, degree, years of experience, area of work, previous exposure to knowledge.

*Methodology:* A quasi experimental study consisting of one group pre test, post test design was selected by the researcher.



Help was obtained from the P.B. B.Sc. nursing students and ICNs.

*Settings and Sample:*

The proposed study was conducted in the various general wards, Private and semi private wards and Intensive Care Units of a tertiary care hospital in Pune and 150 nurses working at that Hospital who fulfilled the sampling criteria were chosen. A *non probability convenience sampling* method was used.

*Tool and Techniques:*

A *structured questionnaire* was administered to assess the knowledge scores and the observation technique was used for observing the practice of respondents.

*Validity and Reliability:*

The content validity and the reliability of the tool were obtained by experts in the field and a pilot study was conducted between 7<sup>th</sup> and 19<sup>th</sup> Oct 2010.

#### *Data Gathering Process:*

The study was conducted between 1<sup>st</sup> Nov 2010 to 18<sup>th</sup> Dec 2010 at the tertiary care hospital at Pune City.

#### *Findings of the study:*

##### *Section I: Analysis of Demographic variables:*

#### *Gender, Age & Number of years of Service at Study Hospital:*

Majority i.e. 91.59% of the respondents were female nurses, who were less than 25 years of age, with major representation was from ICUs and semi private and private wards with 32.77 % and 31.93% respectively.

56.30% were having less than one year of service & 26.05% with service from 1 to 5 years.

#### *No of years of service at study hospital of nurses*

Experience at study hospital (Yrs)	No of Nurses	Percentage
< 1	67	56.30
1 – 5	31	26.05
5 – 10	8	6.72
10 - 20	5	4.2
≥ 20	8	6.72
Total	119	100

#### *Designation & Qualification:*

89.08% of the respondents were staff nurses.

With 63.87% of them being GNMs i. e and 30.25% were B.Sc. Nurses .

#### *Additional Qualification:*

Only 10.08% staff had acquired additional qualification in the form of PGDHM, BLS, ACLS etc.

#### *Section II:*

##### *1. Comparison of Knowledge of Infection Control Protocols:*

The knowledge of infection control protocols was poor (32.77%) to average (65.55%) among nurses during pre test, While during post test the nurses in the good category increased from 1.68% to 5.4% and the nurses in average category increased to 77.3% and poor category decreased to 17.65%.

##### *2. Comparison of Frequency of Use of Infection Control Manual:*

The frequency of use of infection control protocol increased from 19.33% to 37.81% in average category and 10.92% to 12.60 % in good category and in poor category decreased from 64.71 % to 43.7%. Showing that the awareness about infection control protocol increased among nurses and they started frequently using it.

##### *3. Comparison of overall pre and post test knowledge & Practice among Nurses about infection control protocols:*

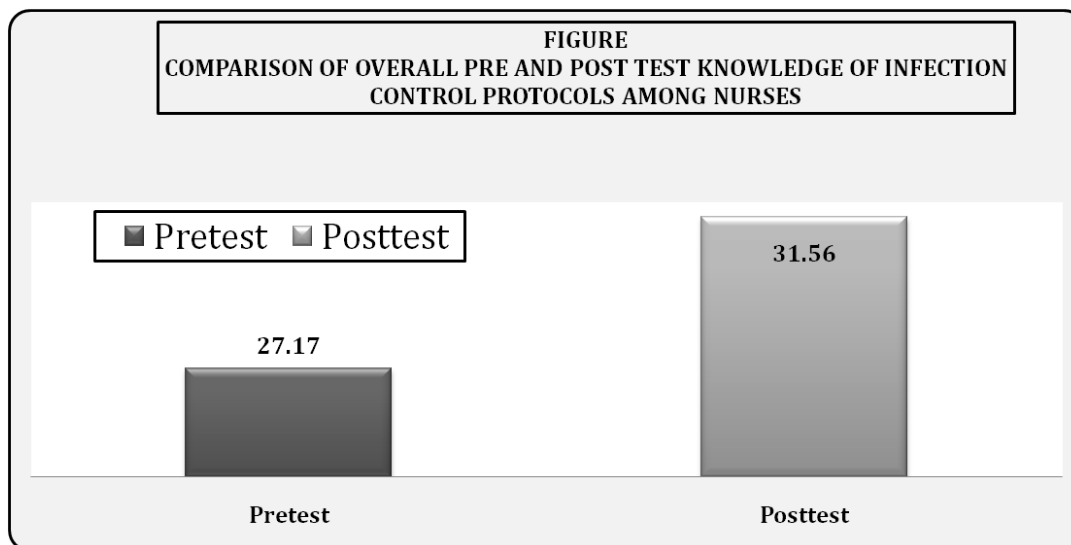
There was a *highly significant* difference in the *overall knowledge & practice* of infection control protocols among nurses during post test showing that the overall effect of training was good.

##### *4. Comparison of Topic wise difference in the knowledge & practice among nurses:*

In *knowledge* about sharps, hand hygiene, PPE / Barrier Nursing, and catheter care there was a *significant* difference in the knowledge. There was a *highly significant* difference in the *practice in Hand Hygiene, Hand Rubs, Urine Sample collection and care of peripheral IV canula.*

Table showing comparison of overall pre and post test knowledge of infection control protocols among nurses.

Knowledge score	Pre test	Post test	Wilcoxon Z	P Value
	Mean $\pm$ SD	Mean $\pm$ SD		
Overall	27.17 $\pm$ 11.01	31.56 $\pm$ 10.74	9.53	<0.0001



### Section III: Comparison of Pre and Post Test Knowledge and Practices with Certain Demographic Variables

1. *Comparison of pre and post test Knowledge & Practice of infection control protocol according to gender among nurses:* There is no significant difference between the male and female knowledge scores & practice of IC protocol in the Pre and Post test.
2. *Comparison of pre and post test Knowledge & Practice of infection control protocol according to educational qualification in study group:* There was no significant difference in the knowledge & practice scores of ANMs, GNMs, and B.Sc. Nurses.
3. *Comparison of pre and post test Knowledge & Practice of infection control protocol according to area of working in study group:* There was a highly significance difference between area of working, knowledge scores

about infection control protocols in the pre test and post test. There was no significant difference in the practice in pre test among nurses based on area of working whereas the difference in the practice was significant among nurses based on area of working with increase in the desirable practice in the other departments.

4. *Comparison of pre and post test Knowledge & Practice of infection control protocol according to years of experience in study group:* There is no difference at all in the knowledge & practice scores of nurses based on no. of years of experience in the pre test.
5. *Comparison of pre and post test Knowledge & Practice of infection control protocol according to age in study group:* There is no significant difference in the knowledge & Practice between various age groups among pre and post test scores.

6. *Comparison of pre and post test Knowledge & Practice of infection control protocol according to IC training in study group:* There is no significant difference in the knowledge & practice between pre and post test scores based on exposure to IC training.
7. *Correlation between pre & post test Knowledge and practice in study group:* There is no correlation between pre & post test knowledge and practice. This means that practice is independent of knowledge about infection control protocols in the pre test group. This could be probably because of the attitude of nurses towards the practice of infection control protocols.

#### *Conclusion:*

From the above study, it can be concluded that the knowledge has significant impact on practice of the nurses but there is no correlation between knowledge and practice. Training gives rise to change in the practice for a novice professional.

The requirement of ongoing in service education is again emphasized through this study. There was overall improvement in the knowledge & practice score of nurses but there was not much significant difference according to various demographic variables among nurses. This shows that the training was highly effective, however to have improvement in the practices, it is a must to keep reinforcing the knowledge regarding infection control.

#### *References*

1. Mehta G. The Challenge Ahead Focus on patient safety and infection control: President's Address, IX HISICON 2007. National

- Conference of Hospital Infection Society – India. 2007. Hospital Infection Society of India – Newsletter. Vol (3), 1-2.
2. Duce G, Fondation Hygie, Fabry J., Lyon, Nicolle L., et al. Prevention of Hospital-acquired Infections: A Practical Guide. 2<sup>nd</sup> ed. 2002. Malta: GAR. World Health Organization: Department of Communicable Disease, Surveillance and Response. WHO.
3. CDC guidelines for infection control in hospital personnel. Am J Infect Control, 1998, 26:289–354 or Infect Control Hosp Epidemiology 1996; 17:438–473. <http://www.cdc.gov/hai/index.html>
4. Louis V, Bihari MB, Suter P, et al. The prevalence of Nosocomial Infections in intensive care units in Europe. European Prevalence of infection in Intensive care (EPIC) study. JAMA 1995; 274: 639–44.
5. Haley RW, White JW, Culver DH, et al. The efficacy of infection surveillance and central programs in preventing nosocomial infections in US hospitals (SENIC). Am J Epidemiology 1985; 121: 182–205.
6. Bertalanffy Von, L. General Systems Theory. 1968. New York. [http://www.utwente.nl/cw/theorieenoverzicht/Theory%20clusters/Communication%20Processes/System\\_Theory.doc/](http://www.utwente.nl/cw/theorieenoverzicht/Theory%20clusters/Communication%20Processes/System_Theory.doc/)
7. Minnaar Ansie, Infection Control Made Easy: A Hospital Guide for Health Professionals: Professional Nurse Series, Mills Litho, Maitland, Cape Town. 2008.
8. Weinstein Robert A. Nosocomial Infection – a Historical Perspective-CDC. Emerging Infectious Diseases. 1998, July - Sept. 4(3). Retrieved from .– <http://www.ciriscience.org/>
9. Rotter M. Hand washing and hand disinfection. In: Mayhall CG, ed. Hospital epidemiology and infection control. 2<sup>nd</sup> ed. 1999 Philadelphia, PA: Lippincott Williams & Wilkins.

