

## Impact of Multi-intervention on attitude among health care professionals on practice of infection control measures in selected wards of hospital at Mangaluru, Karnataka, India

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**Abstract:** Basic infection control measures in any healthcare setup can reduce the rates of healthcare-associated infections. A quasi experimental and Cross sectional descriptive study was conducted to assess the impact of multi intervention on attitude among 150 health care professionals on practice of infection control measures in selected wards of the Hospitals at Mangaluru. Result revealed that, among nurse trainee (50), in pretest 6% had negative attitude where as in next three posttest 100% had positive attitude regarding practice of infection control measures. Among the other health care professionals (70), all had (100%) positive attitude regarding practice of infection control measures. The mean pretest score 94.1 among core nurses and 93.6 in trainee nurses, which are significantly increased posttest I,II, & III after the intervention 121.06,121.4,123.2 simultaneously among core nurses and 120.9,122.6,124.5 among trainee nurses. Effectiveness of multi intervention found highly significant among the core nurses (F=93.3) and among trainee nurses (F=173) in changing their attitude regarding practice of infection control measures. Among other health care professionals mean score of attitude was 112.01, which was positive regarding the practice of infection control measures. Study concluded that Innovative intervention programmes are indeed effective for improving attitude of health care professionals in any health care setting. Therefore Hospital Infection control team must provide continuous opportunities to practice skillful infection control measures.

**Keywords:** attitude, health care professionals, effectiveness, practice of infection control.

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### I. Introduction

Hospital acquired infections include those infections that became symptomatic infections after the client is discharged as well as infections among medical personnel. Most infections transmitted by health care professionals who fail to practice proper standard precautions [1]. Standard precautions are meant to reduce the risk of transmission from one person to another in the health care setting, Standard precautions include hand Hygiene, use of appropriate personal protective equipment, use of aseptic technique to reduce patient exposure to microorganisms and management of sharp, blood spills, linen and waste to maintain safe environment [2].

Hospital acquired infections form a major worldwide public health problem despite advances in our understanding and control of these infections[3] Developing countries were reported to have up to 20 times the risk of contracting a nosocomial infection compared with developed countries [4]. About 5% -10% patients acquire one or more infections and 15%-40% of patient admitted to critical care thought to be affected [5]. An international study covering 47 hospitals in 14 countries (Europe, Eastern Mediterranean, Southeastern Asia and Western Pacific Region) over the period from 1983 to 1985 showed that an average prevalence rate was 8.7%, ranging from 3 to 21% [6]. The highest prevalence rates of Nosocomial Infection were observed in intensive care units and surgery wards [7]

The most important mechanism of spread of these HCAI is via the contaminated hands of the healthcare givers that is doctors, nurses, other staff or relatives/friends of the patients [8] Of all health care personnel, nurses have the most direct, ongoing role in the care of patients and the interventions or procedures that put patients at risk of infection [5]. Inadequate nurse staffing has been linked to increased risk of errors and injuries in patient care, including HAIs, in critically ill patients in particular [9]. Infection control is a quality standard of patient's care and is essential for the well being of the patients and the safety of both patients and staff to accomplish a reduction in infection rates, an infection control program has to be given [10]

Infection control measures, such as appropriate hand hygiene and the correct application of basic precautions during invasive procedures are simple and of low-cost, but require staff accountability and behavioral change, in

addition to improving staff education, reporting and surveillance systems[11]. The prevention of HAI requires attention to three concepts: knowledge, attitude, and practice[12] The World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and others have issued hand hygiene guidelines for health care workers[7]

Compliance on the part of healthcare workers with standard precautions has been recognized as an efficient and effective means to prevent and control health care-associated infections in patients and health workers [13] Suchitra et al. concluded that training has a positive impact on the improvement of knowledge, attitude and practice in healthcare personnel [14].Pérez Parra et al. after implementing an education program as a sole intervention, they observed a 30% reduction in CLABSIs. An attitude of not washing hands among individuals involved in the provision of health care can increase the rate of hospital-acquired infections[15] Nursing is crucial to the success of any preventive program aimed at reducing the incidence of infections in our health care facilities. Nurses therefore, must possess adequate knowledge and demonstrate positive attitude towards achieving the goal of prevention of infections.

## II. Materials And Method

A quasi experimental and Cross sectional descriptive research design was used in this study among total 150 health care professionals (30 Core Nurses ,50 Trainee Nurses and 70 other health care professionals) to assess the attitude about practice of infection control measures. Objective of the study was to assess effectiveness of multi task intervention towards attitude regarding the practice of infection control among nurses and assess the attitude among other health care professionals. The study was conducted in Medical & Surgical wards of the A.J Hospital and Research Center, Mangalore, Karnataka. Samples were collected by using purposive sampling technique. The study was conducted in 3 phases by using the 5 point attitude scale. At the phase 1, researcher assessed the attitude of healthcare professionals included 70 other professionals (senior residents, post-graduates, junior residents) and 30 core nurses and 50 trainee nurses posted in the selected Medical-Surgical wards. In the phase 2 researchers selected 30 core nurses and this core group of professionals were participated in 12hrs of (2 days) participatory infection control training using hand hygiene practice demonstration, display of posters on hand hygiene and distribution of pamphlets on hand hygiene. In phase 3 each of the Core group (n=30) have trained 2-5 staff nurses from their respective units. Participatory infection control training using infection control bundle with learning materials used in phase I were distributed at the end of the training session and necessary infection control posters were displayed in prominent places. At 1 month interval for 3 months post tests was conducted after the participatory infection control training sessions only for nurses. For other health care professionals researcher not given any intervention and not conducted any posttest.

## III. Result

Demographic distribution of Health care professionals shows that, majority of the samples aged between 20-30 years, 80% were females. Sample consists of 51.3% of staff nurses, 23.3% of Postgraduates, 16% of Interns doctors and 9.3 % of surgeons. About75.3% of health professionals were working in surgical ward, 20.7 % were working in orthopedic ward and 4 % were working in medical ward.

Table 1 shows that among group of core nurses (30), in pretest 10% were had negative attitude and 90% had positive attitude where as in next three posttest 100% were had positive attitude regarding practice of infection control measures. Among nurse trainee (50), during pretest 6% were had negative attitude where as in next three posttest 100% were had positive attitude regarding practice of infection control measures. Among the other health care professionals (70), all had (100%) positive attitude regarding practice of infection control measures.

**Table 1:**Shows attitude towards practice of infection control measures among health care professionals  
n1=30, n2=50, n3=70

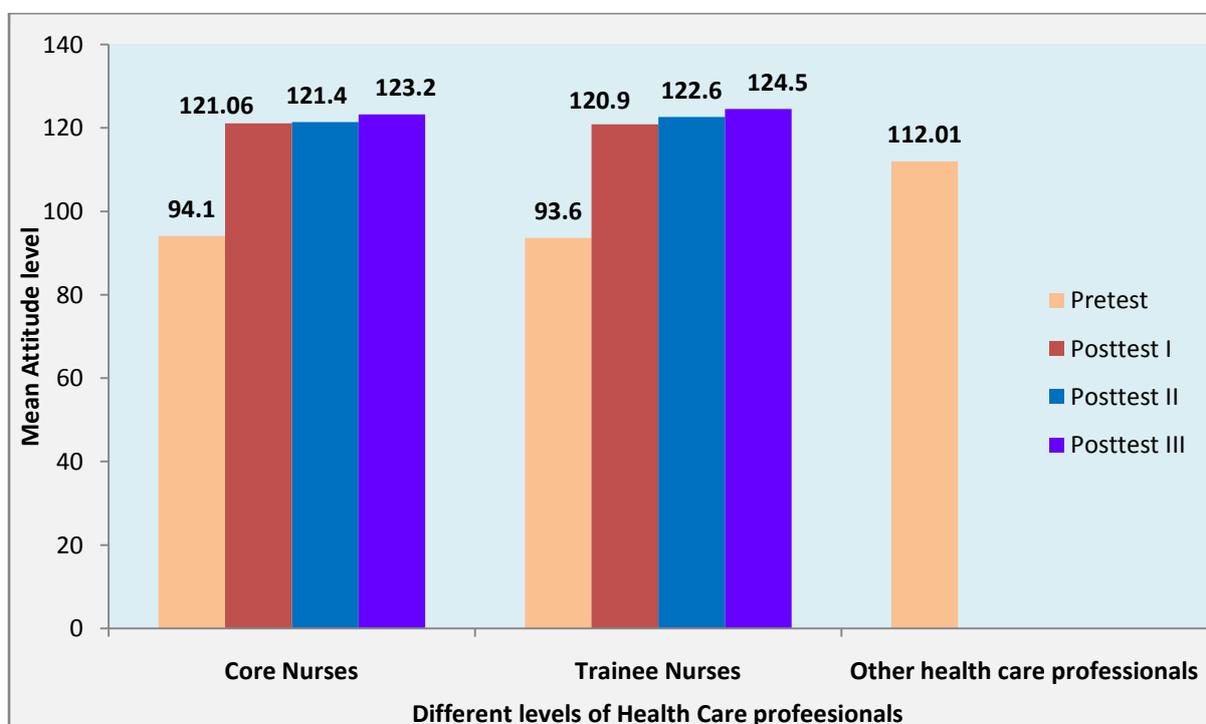
Group	Attitude	Pretest		Post test I		Post test II		Post test III	
		f	%	f	%	f	%	f	%
Core Nurses	Negative	3	10	0	0	0	0	0	0
	Positive	27	90	30	100	30	100	30	100
Nurse Trainee	Negative	3	6	0	0	0	0	0	0
	Positive	47	94	50	100	50	100	50	100
Other Health care professional	Negative	0	0	-	-	-	-	-	-
	Positive	70	100	-	-	-	-	-	-

**Table 2:** F value (Significant effectiveness of Multi intervention), Mean and Standard deviation of attitude score regarding practice of infection control measures among health care professionals  
 n1=30, n2=50, n3=70

Group	Mean ±SD				F Value	Remark
	Pretest	Post test I	Post test II	Post test III		
Core Nurses	94.1±14.8	121.06±3.3	121.4±3.2	123.2±2.7	93.344 *	Significant
Trainee Nurses	93.6±14.4	120.9±3.7	122.6±3.8	124.5±3.2	173.159 **	Highly Significant
Other health care professionals	112.01±9.1					

F<sub>(0.05, 3,117)</sub> = 2.64, F<sub>(0.05, 3,197)</sub> = 2.60

Table 2: Shows that, mean pretest score 94.1 among core nurses and 93.6 in trainee nurses, which are significantly increased posttest I,II,& III after the intervention 121.06,121.4,123.2 simultaneously among core nurses and 120.9,122.6,124.5 among trainee nurses. Effectiveness of multi intervention found highly significant among the core nurses (F=93.3 > 2.64 at 0.05 significance level) and among trainee nurses (F=173.1 > 2.60 at 0.05 level of significant) in changing their attitude regarding practice of infection control measures. Hence research hypothesis was accepted. Among other health care professionals mean score of attitude was 112.01, which was positive regarding the practice of infection control measures.



**Fig1:** Shows mean attitude score regarding practice of infection control measures among health care professionals.

#### IV. Discussion

Infection control measures are integral part in providing quality health care. For such approach to be successful must provide innovative, motivational programmes for health care professionals under infection control wing. A study conducted by JB Suchitra & N Laxmi Devi shows that, Education has a positive impact on retention of knowledge, attitude & practice in all categories of hospital staffs, in order to reduce to nosocomial infections [14].

In present study investigator assessed the attitude regarding practice of infection control measures among different health care professional, majority of samples had positive attitude in the pre test. For the core nurse and trainee nurses are provided with the educational, motivational and innovative intervention towards improving their attitude. Result revealed in the post test shown that there was a marked significant effectiveness of such intervention in improving the attitude. As the setting had good infection control policy and committee it influenced high positive attitude among other health care professionals.

Further, skill training programmes, innovational interventions will provoke the health care professionals to work with high standard, as well to reduce the infection rate. The study conducted by Ayush

Gupta, Rakesh Lodha and V Srinivasan in All India institute of medical sciences, Delhi [16], showed that doctors had high mean score than nurses in attitude and there was no high significant difference found in these two groups. This study result shown that, mean attitude score of other health care professionals (112.2) which was higher than mean attitude score of nurses (94.1, 93.6), where as in the post test mean attitude score of nurses portrayed to be positive.

Study conducted by Adekunbi A F, Ezekiel O. A, Lyabo Y. A and Chinomso U N among registered nurses at Nigeria shows Significant difference was observed between mean attitude score of participants in the experimental group and control group ( $P = 0.03$ ) and training programme was effective in improving the attitude [17]. Similar result shown in present study the multi intervention regarding infection control practice were improved the attitude among the nurses and found significant difference in posttest.

## V. Conclusion

This study revealed that, Majority of the health care professional's attitude towards infection control measures were found positive. Innovative intervention programmes are indeed effective for improving attitude of health care professionals in any health care setting. Therefore Hospital Infection control team must provide continuous opportunities to practice skillful infection control measures.

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