



*Research Paper*

**AWARENESS AND PRACTICES OF NURSES RELATED TO INFECTION CONTROL AND PREVENTION AT PUBLIC SECTOR, PAKISTAN**

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**Abstract**

Hospital acquired infections are one of the main causes of increased hospital stay, economic burden to the nosocomial associated mortality. The prevention is possible by controlled environmental conditions. Nurses has the ability to meet the challenges in the infection program by increased awareness and professional practices. Purpose of this study is to evaluate the knowledge and practices of nurses related to infection control and prevention at Public Sector, Pakistan. The design of study was descriptive cross sectional. The sampling technique for data collection was systematic random sampling with a sample size of 384. The Study period was from January 2020 to June 2020. Data Analysis was through SPSS software version 22. The 75.3% responded that Nosocomial infection is prevented by disinfection. The findings of the study identify gaps in knowledge and practices of nurses related to infection control and prevention at Public Sector, Pakistan. The chi square statistics was applied to test the significance of age and gender on practices of nurses. It is concluded that nurses have adequate knowledge regarding infection control. Also positive attitude shows adequate practices of nurses towards infection control measures. There is a need to undertake such a study with large sample size.

Key words: Knowledge, Nurses, Public Health, Practices, Gujrat, Pakistan.

**INTRODUCTION**

Hospital developed infections are considered as a public health threat globally(Alrubaiee, Baharom, Shahar, Daud, & Basaleem, 2017a). They are among one of the main causes of increased hospital stay, economic burden to the infected and nosocomial associated mortality(Alrubaiee, Baharom, Shahar, Daud, & Basaleem, 2017b; Hussein & Muhbes, 2018). The prevention is possible by controlled environmental conditions that helps in standard functioning of any health care facility. Hospitals utilized the services of infection control department for precautionary measures implementation(El-Hebsh, 2018). Contagion regulation system is defined by

World Health Organization as actions to be undertaken in the society and health care setting for protection of vulnerable population from infection by precautionary and control activities(Geberemariam, Donka, & Wordofa, 2018). Hygiene is considered to be most important measure in hospitals for contagion deterrence and infection control(Alyahya, Hijazi, Al Qudah, AlShyab, & AlKhalidi, 2018). Nosocomial infections morbidity ranges from 10% to 25% in advanced and emerging nations globally (Desta et al., 2018).

Health care professionals were involved in transmission of infections if they fail to exercise good hand hygiene practices in between patient interactions. Good hand hygiene practices are generally recognized as the most significant action that decreases infection related morbidity and mortality(O Nour, Mohamed, Al Bishi, & Amir, 2017). The implementation of precautionary measures like by adopting safe antiseptic techniques in patient handling, hospital environmental sanitization and fumigation of infected areas, sterilization of instruments, disinfection surveillance system, training of staff on precautionary measures and control activities, protocol for isolation units, rational antibiotic use, Use of needle cutter, iatrogenic infection prevention, proper waste disposal with incineration and immunization coverage of hospital staff(De Jonge et al., 2019; Prevention).

Every health care setting recommends a committee of health care professionals for contagion control and prevention(Nasiri et al., 2019). The committee provides nosocomial surveillance data for identification, recognition and understanding of hospital linked infections for control and prevention.

## **LITERATURE REVIEW**

The health care professional's awareness, attitude and adherence with infection control procedures in United Kingdom Birmingham instruction hospitals was showed by Stein.(Stein, Makarawo, & Ahmad, 2003) The findings of this survey specified that general information about blood-borne viral spread via injury by needle stick was little. The authors suggested training, controlling, accessibility of resources and punishment on violation can progress infection control program in hospitals. Another survey based on good hand hygiene practices and associated infections concluded that majority of the nurses in comparison with doctors were aware that health care connected infections can be limited by good hand hygiene(G Iliyasu et al., 2016). A

descriptive survey assessed the awareness and practice of nosocomial infection among nursing professionals in surgical wards of hospital. The results of the study indicated that ninety eight percent heard about nosocomial infection while ninety four percent have difficulties in precautionary practices (Nasiri et al., 2019). The shortage of materials and bad working environment were significant contributors. The knowledge of health care professional regarding nosocomial infection is essential in practicing prevention. The frequent use of hand hygiene may decrease the level of nosocomial infection in any hospital. The knowledge about use of water, alcohol scrub, needle cutter for syringe disposal, waste segregation is essential for practice.

Medicinal services gained diseases (HCAIs) in any case call nosocomial contamination is related with expanded grimness and mortality among hospitalized patients and inclines human services laborers (HCWs) to an expanded danger of diseases. The investigation investigates the information and practices of contamination control among HCW in a tertiary referral community in North-Western Nigeria. This is a cross-sectional examination. A self-controlled organized survey was appropriated to the investigation gathering (of specialists and medical caretakers). Information on information and practice of contamination control were gotten and dissected. Study populace were chosen by comfort inspecting. An aggregate of 200 reactions were examined, 152 were attendants while 48 were specialists. The middle age and long stretches of working experience of the respondents were 35 years (interquartile run [IQR] 31–39) and 7 years (IQR 4–12), individually. The vast majority of the respondents 174/198 (87.9%) accurately recognized hand washing as the best strategy to forestall HCAI, with medical attendants having better information 139/152 (91%) ( $P = 0.001$ ). Greater part concurred that staying away from injury with sharps 172/200 (86%), utilization of hindrance safeguard 180/200 (90%) and hand cleanliness 184/200 (92%) viably forestall HCAI. Just 88/198 (44.4%), 122/198 (61.6%), and 84/198 (42.4%) of the respondents knew about the dangers of contamination following presentation to human immunodeficiency infection, hepatitis B infection and hepatitis C infection tainted blood, individually. About 52% of specialists and 76% of medical attendants ( $P = 0.002$ ) consistently practice hand cleanliness in the middle of patient consideration. Holes have been recognized in information and practice of contamination control among specialists' and medical

caretakers' in the investigation; consequently, it will be valuable for all HCW to get formal and occasional boost trainings(Garba Iliyasu et al., 2016).

### **Problem statement and justification**

Nursing professionals plays a central role in contagion control and prevention committee by implementing standardized program in hospitals as they are in direct communication with patients during treatment and care. Nurses has the ability to meet the challenges in the infection program by increased awareness and professional practices. Majority of the developing countries nurses are not adequately trained therefore their deficient knowledge and skills resulted in suboptimal adherence to the infection prevention guidelines. Therefore, a research investigation is needed to evaluate the knowledge and practices of nurses related to infection control and prevention at Aziz Bhatti shaheed hospital, Gujrat, Pakistan

### **Purpose of the study**

To identify gaps in knowledge and practices of nurses related to infection control and prevention at Public Sector, Pakistan

### **Theoretical framework**

Health belief model provides understanding of change in health associated behavior. The two basic factors that are involved in behavioral modification are that nurses feel endangered by the nosocomial infections and nurses must believe that the benefits of awareness and prevention are more than not adopting.

### **Objectives of the study**

1. To assess knowledge related to control and prevention of nosocomial infection among nurses at Public Sector, Pakistan
2. To evaluate practices related to control and prevention of nosocomial infection among nurses at Public Sector, Pakistan

### **METHODOLOGY**

This was a descriptive cross-sectional study conducted among nurses at public sector of Pakistan. Systematic random sampling method was used for data collection. Assuming Knowledge prevalence in Pakistan to be 50% with an allowable error of 5% and 95% Confidence limits  $n = Z^2 * P (1-P) / d^2 = 384$ . A self-designed tool was used. The

study collected data was computed with the help of SPSS version 22. Inferential Statistics such as Chi square distribution was used to assess the association between knowledge and practices. Approval of the research study was taken by the Institutional Review Board of the University of Lahore and written informed consent was taken from study participants. Privacy and confidentiality of the data was ensured.

## RESULTS

### Sociodemographic of the Participants

The sociodemographic of the participants are presented in Table 1

Table 1: Sociodemographic of the Participants

Sr. No	Variable	Frequency	Percentage
1	<b>Gender</b>		
	Male	73	24.3%
	Female	227	75.7%
2	<b>Age</b>		
	15-29	118	39.3%
	30-44	101	33.7%
	45-59	81	27.0%
3	<b>Education</b>		
	Diploma	147	49.0%
	Post RN BSN and higher	153	51.0%
4	<b>Experience</b>		
	Less than 5 years	156	52%
	5 to 9 years	52	17.3%
	10 to 14 years	49	16.3%
	Greater than 14 years	43	14.3%
5	<b>Marital status</b>		
	Married	132	44%
	Unmarried	168	56%

Regarding gender about 75.7 percent of the respondents were female and rest 24.3 percent were male as presented in fig 2.

### Influence of Age and Gender on Knowledge

Table: 2 Influence of Age and gender on Knowledge, of nurses

Characteristics	Gender		Age	
	$\chi^2$ significance		$\chi^2$ significance	
<b>Knowledge</b>				
Nosocomial infection is prevented by disinfection	3.02	0.08	1.80	0.17
Use of antiseptic will prevent nosocomial infection	3.76	0.05*	0.03	0.84
Equipment's must be sterilized to prevent nosocomial infection	3.02	0.08	3.96	0.04
Autoclaving destroy all microorganisms including spores.	6.22	0.01*	2.64	0.10
Equipment's need decontamination before sterilization	3.02	0.08	1.54	0.21
Knowledge of the use of 0.5% chlorine solution in infection prevention	6.22	0.01*	1.01	0.31
Use of hand washing soap for 20 seconds decreases the transmission risk of nosocomial infections	6.22	0.01*	0.48	0.48
Use of alcohol-based antiseptic decreases the transmission risk of nosocomial infections	6.22	0.01*	0.22	0.63
Gloves must be used while handling blood or body fluids.	4.32	0.03*	2.07	0.15
Knowledge of the use of incinerator for waste disposal	2.22	0.13	1.58	0.20
Knowledge of the color segregation for waste management	1.31	0.25	1.77	0.18

Note: \* indicates the significance level at 0.05

The chi square statistics was applied to test the significance of age and gender on knowledge of nurses. The result of study revealed that all variables except use of antiseptic will prevent nosocomial infection, autoclaving destroy all microorganisms

including spores, knowledge of the use of 0.5% chlorine solution in infection prevention, use of hand washing soap for 20 seconds decreases the transmission risk of nosocomial infection, use of alcohol-based antiseptic decreases the transmission risk of nosocomial infections and gloves must be used while handling blood or body fluids were non-significant in respect of gender of nurses. All variables were non-significant with respect to Age.

### Influence of Age and Gender on Practices

Table: 3 Influence of Age and gender on Practice of nurses

Characteristics	Gender		Age	
	$\chi^2$ significance		$\chi^2$ significance	
<b>Practice</b>				
Apply antiseptic hand rub to clean hands	0.124	0.725	1.92	0.38
Use all Personal Protective Equipment's (PPE) to prevent the risk of acquiring and/or transmitting infection	0.46	0.831	1.66	0.43
Mix all health care wastes during duty hours	0.49	0.826	0.31	0.85
Change disinfectant chlorine solutions?	0.88	0.34	0.82	0.66
Often do you use glove (both hands)?	1.70	0.19	1.85	0.39
Incinerate or bury used sharp materials	0.23	0.63	0.23	0.89
Used sterilized instrument before any procedure?	2.1	0.14	3.09	0.21
Wash hands with soap before and after patient care?	10.28	0.001*	7.81	0.02*
Vaccinated against common pathogen	0.24	0.62	0.23	0.89
Used needles or sharps put on containers	0.21	0.64	0.46	0.97
Used Infection prevention guideline/evidence	0.02	0.87	0.66	0.71
Recap needle before disposing	1.02	0.31	1.70	0.42
Cover wounds on the skin before you start your work	1.53	0.21	0.85	0.65
Give health education to patients for nosocomial infections	0.16	0.68	1.05	0.59

Note: \* indicates the significance level at 0.05

The chi square statistics was applied to test the significance of age and gender on practices of nurses. The result of study revealed that all variables except wash hands with soap before and after patient care were non-significant in respect of gender and age of nurses.

## DISCUSSION

Nosocomial transmission of diseases among medicinal services providers and their patients typically results from break in emergency clinic contamination control rules. To diminish this, there is have to instruct social insurance suppliers on contamination control measures, nonetheless, this must be accomplished by understanding the holes in information and practice of disease control among medicinal services providers. Our inspection affirms a few gaps in information in regards to infection practice control, while the act of contamination control is commonly less. Also, with extensive in-hospital infection management instruction, differences in awareness and practice of nursing staff infection control have been observed. This underscores the need for ongoing refresher training and measures to compel the hospital to implement infection control as suggested by studies in literature review(Haque, Sartelli, McKimm, & Bakar, 2018; Kleinpell, Munro, & Giuliano, 2008).

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