



## Original Research Article

# A CROSS SECTIONAL STUDY ON STANDARD PRECAUTIONS PRACTICE AMONG PARAMEDICAL HEALTH CARE WORKERS IN A TERTIARY HOSPITAL OF GADAG

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## ABSTRACT

**Background:** Healthcare-associated infections causes' burden on patient and health care system which can be prevented by implementation of Standard Precautions. **Aims and objectives:**1. To assess the Standard Precautions Practice among paramedical Health care workers in the Tertiary Hospital of Gadag. 2. To determine the association between type of paramedical workers and their Practice of standard precautions in the Tertiary Hospital of Gadag.

**Materials and Methods:** A cross sectional study was conducted among 160 paramedical staff working in Tertiary Hospital of Gadag coming in contact with patients either by diagnosis, treatment or patient care The study subjects were interviewed using a Predesigned and semi structured questionnaire to collect information regarding socio demographic profile, practice of Standard precautions. Data was analyzed by proportion and chi-square test.

**Results:** Among 160 study subjects 102 were Nursing Staff, 14 Laboratory Technicians and 44 Group D staff and the mean age were 29.03±6.339. 83.6% nursing staff and laboratory technicians always wore gloves when there was a risk of being contaminated with the blood or bodily fluids of a patient.

**Conclusion:** The study concluded that majority of the participants adhered to the Standard Precautions practices and can it be improved by focused training programs.

**Key words:** Standard Precautions; Practice; Paramedical Health Care workers.

## INTRODUCTION

Globally, healthcare-associated infections significantly increases the morbidity and mortality, especially in low and middle-income nations affecting hundreds of millions of patients around the world.<sup>[1,2,3]</sup> It is several fold higher in low- and middle-income countries than in high-income ones prompting urgent action to prevent and control the spread of antibiotic resistant organisms and implementation of Standard Precautions is a fundamental strategy. Difficult to gather the reliable data since most countries lack surveillance systems for it, and those that do have them struggle with the complexity and the lack of uniformity of criteria for diagnosing it.

Due to resource limitations and gaps in infection prevention practices, the burden of healthcare-

associated infections in India is still high.<sup>[4]</sup> Paramedical healthcare workers including laboratory technicians, nursing assistants, and Group D/ allied staff frequently interact with patients and participate in procedures and they are more vulnerable to occupational exposure.<sup>[5]</sup>

Evidence indicates that healthcare workers' knowledge and practices vary, despite the significance of following standard precautions.<sup>[6,7]</sup> There is a dearth of information, especially in the Indian context about practice of standard precautions among paramedical personnel.

### Aims and objectives

1. To assess the Standard Precautions Practice among paramedical Health care workers in the Tertiary Hospital of Gadag.
2. To determine the association between type of paramedical workers and their Practice of

standard precautions in the Tertiary Hospital of Gadag.

## MATERIALS AND METHODS

A cross sectional study was conducted for six months in the year 2018–2019 among all 160 paramedical staff working in Tertiary Hospital of Gadag coming in contact with patients either by diagnosis, treatment or patient care i.e. 102 Nursing Staff, 14 Laboratory Technicians and 44 Group D staff. Universal sampling was applied and the paramedical staffs willing to participate in the study were included and Clerical staffs were excluded from the study. Ethical approval was obtained from the Institutional Ethics Committee and written informed consent was taken in local language from the study subjects and confidentiality of information was maintained throughout the study. The study subjects were interviewed using a Predesigned and semi structured questionnaire to collect information regarding socio demographic profile, practice of Standard precautions. Data was collected and coded. It was entered in excel sheet and analyzed by proportion and chi-square test using SPSS version 21. The  $\chi^2$  test was used to test association between categorical variables. A p value  $\leq 0.05$  (two-tailed) was considered statistically significant.

## RESULTS AND DISCUSSION

In the study the mean age of the study subjects were  $29.03 \pm 6.339$ . Majority of them 73.8% (118) belongs to age group 21-30 years and 55% (88) were female. The majority of study subjects 66.3% (106) had completed Graduation and 63.7% (102) were Nursing Staff, 8.8% (14) were Laboratory Technicians and 27.5% (44) Group D staff which was almost similar to the study conducted by K Vaz et al 8 in Jamaica in which the majority of study subjects (65%) are females and (52%) belongs to age group 17-29. [Table 1]

Majority of 53.4% (62) Nursing Staff and Laboratory Technicians always used protective equipment, for a procedure depending on their observation of the

patient which in contrast to the study done by Gebresilassie et al 9 86.7% always used Personal protective equipment Practice. In the study 76.7% (89) Nursing Staff and Laboratory Technicians always assumed that blood and all bodily fluids of patients are infectious, 83.6% (97) Nursing Staff and Laboratory Technicians always wore gloves when there was a risk of being contaminated with the blood or bodily fluids of a patient, 27.6% (32) Nursing Staff and Laboratory Technicians always washed with soap and water after contact with infective material, 31% (36) Nursing Staff and Laboratory Technicians always wore a gown during procedures and patient-care activities when contact of clothing /exposed skin with blood/bodily fluids, secretions, and excretions was anticipated, 28.4% (33) Nursing Staff and Laboratory Technicians always applied the Standard Precautions (SP) in situations that might lead to contact with sweat, 59.5% (69) Nursing Staff and Laboratory Technicians always wore gloves before caring for patients if they have wound, 81.9% (95) Nursing Staff and Laboratory Technicians always cautiously avoid injury from used needles, 69% (80) Nursing Staff and Laboratory Technicians always immediately disposed used needles in a sharps container, 25% (29) Nursing Staff and Laboratory Technicians always washed hands after removing gloves which were statistically significant ( $p < 0.001$ ) whereas the study done by Harish Kumar TVS et al 10 43.86% nursing students always assumed that blood and all bodily fluids of patients are infectious, 71.93% Nursing Students always wore gloves when there was a risk of being contaminated with the blood or bodily fluids of a patient, 76.75% Nursing Students always wore gloves before caring for patients if they have wound, 75% Nursing Students always cautiously avoid injury from used needles. [Table 2]

Majority of 77.3% (34) Group D staff always used standard precautions for cleaning of blood spill, 97.7% (43) staff always used standard precautions while touching body fluids and discharge, 43.2% (19) always used standard precautions when skin was non-intact, 52.3% (23) Group D staff always sanitized hands after above procedures. [Table 3]

**Table 1: Distribution of study subjects according to Socio-demographic factors of the Study subjects (n=160)**

Socio-demographic factors	Category	No.	%
	Age	21-30	118
31-40		34	21.2
41-50		4	2.5
51-60		4	2.5
Total		160	100
Gender	Male	72	45
	Female	88	55
	Total	160	100
Occupation	Nursing Staff	102	63.7
	Lab Technicians	14	8.8
	Group D staff	44	27.5
	Total	160	100

**Table 2: Distribution of Study subjects according to Practice of Nursing staffs and Laboratory Technicians regarding Standard precautions. (n=116)**

Questions	Male									Female									Total									P value									
	Always	%	Usually	%	Sometimes	%	Seldom	%	Never	%	Always	%	Usually	%	Sometimes	%	Seldom	%	Never	%	Always	%	Usually	%	Sometimes	%	Seldom		%	Never	%						
I use protective equipment, for a procedure depending on my observation of the patient.	30	25.9	8	6.9	10	8.6	6	5.2	0	0	3	2.7	1	1.8	1	1.5	8	6.9	4	3.4	0	0	6	5.3	2	2.2	1	1.8	1	1.5	8	6.9	0	0	X <sup>2</sup> -164.483 df=8 *p=0.00		
I assume that blood and all bodily fluids of patients are infectious	40	34.5	12	10.3	2	1.7	0	0	0	0	4	4.2	2	2.9	7	7.8	4	3.4	0	0	0	0	8	7.6	1	1.8	1	1.6	5	5.2	0	0	0	0	X <sup>2</sup> -161.002 df=6 *p=0.00		
I wear gloves when there is a risk of being contaminated with the blood or bodily fluids of a patient.	42	36.2	10	8.6	2	1.7	0	0	0	0	5	4.7	4	5.5	7	6	0	0	0	0	0	0	9	8.3	1	1.4	2	1.7	1	1.7	0	0	0	0	X <sup>2</sup> -164.123 df=6 *p=0.00		
Washing with soap and water for 5 minutes is my first step after contact with infective material	17	14.7	27	23.3	1	1.0	8	8.6	0	0	0	0	1	1.5	2	3.5	3	3.0	1	1.7	0	0	3	2.7	6	5.3	2	2.0	1	1.7	2	1.7	0	0	X <sup>2</sup> -162.588 df=8 *p=0.00		
I wear a gown during procedures and patient-care activities when contact of clothing /exposed skin with blood/bodily fluids, secretions, and excretions is anticipated.	16	13.8	17	14.7	1	1.5	2	2.9	3	2.6	2	2.0	1	1.7	1	1.9	1	1.6	2	2.1	1	1.8	0	0	2	1.7	3	3.6	3	3.1	3	3.6	2	2.6	5	4.3	X <sup>2</sup> -164.790 df=10 *p=0.00
I apply the SPs in situations that might lead to contact with sweat.	20	17.2	20	17.2	9	7.8	5	4.3	0	0	1	1.3	1	1.2	2	2.0	1	1.7	1	1.9	1	1.6	1	1.0	3	2.8	4	3.4	2	2.8	1	1.5	1	1.9	0	0	X <sup>2</sup> -167.499 df=8 *p=0.00
If I have a wound, I wear gloves before caring for patients	31	26.7	16	13.8	5	4.3	2	1.7	0	0	3	3.2	2	2.8	1	1.7	4	3.6	6	5.2	1	1.0	6	5.9	3	2.8	1	1.5	9	8.6	3	2.6	0	0	X <sup>2</sup> -159.844 df=8 *p=0.00		
I cautiously avoid injury from used needles.	44	37.9	5	4.3	5	4.3	0	0	0	0	5	4.4	4	3.9	7	6.8	2	1.7	0	0	0	0	9	8.1	1	1.2	7	6.9	6	5.9	0	0	0	0	X <sup>2</sup> -162.95 Df=6 *p=0.00		
I immediately dispose of a used needle in a sharps container.	35	30.2	14	12.1	5	4.3	0	0	0	0	4	3.8	5	4.8	1	1.5	2	1.9	2	1.7	0	0	8	6.9	2	2.5	7	6.9	6	5.9	0	0	0	0	X <sup>2</sup> -161.780 df=6 *p=0.00		
I wash my hands after removing gloves.	17	14.7	15	12.9	1	1.7	4	4.3	0	0	1	1.0	3	3.4	2	2.9	1	1.9	4	3.4	0	0	2	2.9	2	2.5	4	4.9	2	2.9	9	7.8	0	0	X <sup>2</sup> -170.914 df=8 *p=0.00		

**Table 3: Distribution of Study subjects according to Practice of Group D workers regarding Standard precautions. (n=44)**

Questions	Male						Female						Total						P value
	Alw ays Yes	%	Usua lly no	%	Someti mes Do not know	%	Alw ays	%	Usua lly	%	So me tim es	%	Alw ays	%	Usua lly	%	Someti mes	%	
Uses SP for cleaning of blood spill	13	29.5	5	11.4	0	0	21	47.7	4	9.1	1	2.3	34	77.2	9	20.5	1	2.3	X <sup>2</sup> -1.592 df-2 p=0.451
Uses SP while touching body fluids and discharge.	18	40.9	0	0	0	0	25	56.8	1	2.3	0	0	43	97.7	1	2.3	0	0	X <sup>2</sup> -0.708 df-1 p=0.400
Uses SP if skin is non-intact	9	20.5	6	13.6	3	6.8	10	22.7	7	15.9	9	20.5	19	43.2	13	29.5	12	27.3	X <sup>2</sup> -1.732 df-2 p=0.421
Wears protection while disposing health care waste	14	31.8	4	9.1	0	0	18	40.9	8	18.2	0	0	32	72.7	12	27.3	0	0	X <sup>2</sup> -0.392 df-1 p=0.528
Sanitize hands after above procedure	11	25	0	0	7	15.9	12	27.3	2	4.5	12	27.3	23	52.3	2	4.5	19	43.2	X <sup>2</sup> -1.970 df-2 p=0.373

## CONCLUSION

Adherence to standard precautions among paramedical healthcare workers was exhibited by majority of the participants. Since the study was conducted among the newly recruits the above study enforces the need for conducting focused training programs for the better practices. The study has attempted to highlight the issues that are to be addressed with regard to standard precautions. We need to implement interventions that focus on practice and access to resources to boost compliance.

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