RESEARCH ARTICLE

TO EVALUATE THE RESPONSE ON GUIDELINE OF PERSONAL PROTECTIVE EQUIPMENTS AMONG NURSING PROFESSIONALS IN WORKING AREAS OF COVID-19 IN VARIOUS STATES OF INDIA

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ABSTRACT

Introduction: As health care professionals, we are providing challenging time to ensure that we are still able to provide safe and effective care to patients. Personal protective equipment (PPE) is important to protect both patients and staff, while caring for those with suspected or confirmed COVID-19 infection. **Material & Methods:** The research approach adopted for this study was evaluative and an educative approach with a qualitative approach – survey method design. Semi structured questionnaire will be administered to the participants by using online link (published) method for data collection. includes a sample of 313 nursing personnel. **Result:** On an average, hospital staffs are having 55.45% of knowledge score on COVID-19. Generalization of knowledge score was calculated using and mean with 95% CI and proportion with 95% CI. **Conclusion:** In general, 40.71% of the staffs are having inadequate level of knowledge score, 58.01% of them having moderate level of knowledge score and 1.28% of them are having adequate level of knowledge score

INTRODUCTION

Personal protective equipment (PPE) includes an array of supplies that healthcare facilities utilize to keep their employees and patients safe. These include eye protection (e.g., goggles, face shields), isolation gowns, facemasks, respirators (e.g., N95s, PAPRs), and gloves. The Centers for Disease Control and Prevention (CDC) note that PPE shortages are currently posing a tremendous challenge to the US healthcare system because of the COVID-19 pandemic. As such, CDC recommends that use of specific types of PPE discussed in this document (e.g., facemasks, respirators) be limited to healthcare personnel and very few other groups (e.g., corrections staff, law enforcement). For many others, recommended interventions include use of non-PPE controls such as social distancing and cloth face coverings.

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Healthcare Personnel (HCP): HCP include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel).[1]

PPE for coronavirus (COVID-19) includes surgical masks, P2/N95 respirators, gloves, goggles, glasses, face shields, gowns and aprons. Find out who in the health workforce should use PPE, how to use PPE, and how we are managing the PPE in our National Medical Stockpile. PPE protects the wearer from infection. Proper use helps keep health workers safe and stops the spread of COVID-19.[2]

Objectives of the study

- To evaluate the response on guideline of personal measures among nursing professionals
- To determine the association of response with selected baseline variables

MATERIAL AND METHODS

The research approach adopted for this study was evaluative and an educative approach with a qualitative approach – survey method design. The convenient sampling technique was utilized for the selection of the nursing professionals working in quarantine centres, hospital, laboratory and primary health care / community settings, institutions and other direct or indirect approach to COVID-19 at various state of India, which includes a sample of 313

Data Collection Method

Semi structured questionnaire will be administered to the participants by using online link (published) method for data collection.

Validity and reliability: Validity of the tool was assessed using content validity. Content validity was determined by experts from nursing and Medical. They suggested certain modifications in tool. After the modifications they agreed this tool for assessing staffs knowledge on COVID-19. Reliability of the tool was assessed by using Test-retest method. Knowledge score reliability correlation coefficient value was 0.86. This correlation coefficient was very high and it is good tool for assessing staffs knowledge on COVID-19.

RESULTS

Considering age, majority of the study participants Age group 171 (54.81%) were between 20-30, 103(33.01%) were between above 30-40 years, 26 (8.33 %) were between 40-50 years and 12(3.85%) were >50 years.

Related to Area of working, the majority of study participants 144(46.15%) institution staffs, 138(46.15%) were hospital staffs, 25(8.02%) were community staffs and 5(1.60%) Quarantine centers staffs.

With regard to Mode Of Information On Covid-19, 5(1.60%) of them having information through Print Media, 34(10.90%) of them having information through Social Media,4(1.28%) of them having information through Social Media,269(86.22%) of them having information through all the above.

With regard to working experience, 239(76.60%) of them having 1-10 years experience, 65(20.83%) of them having 11-20 years' experience, 5(1.60%) of them having 21-30 years' experience and 3(0.97%) of them having >30 years' experience.

With regard to Training For Working In Covid 19, 58(18.59%) of them having training and 254(81.41%) of them not having training. On an average, hospital staffs are having 55.45% of knowledge score on COVID-19.
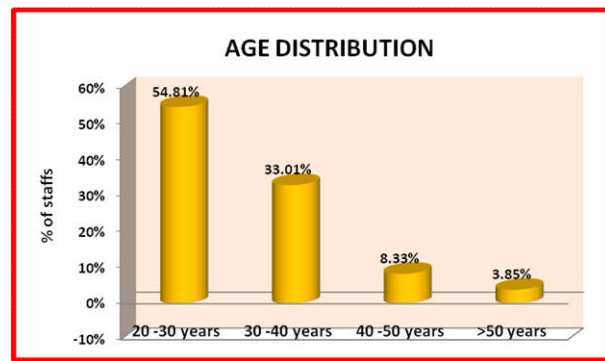

Fig. 1. Simple bar diagram shows the age distribution of staffs

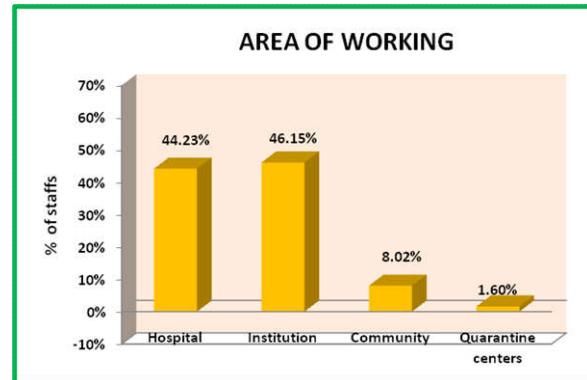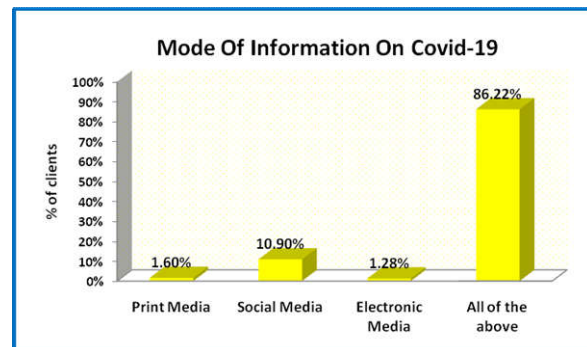**Fig 2. Simple bar diagram shows the Area of working of staffs**

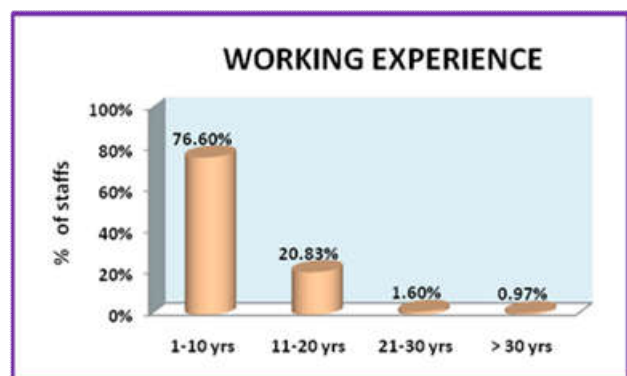**Fig 3. Simple bar diagram shows the Mode Of Information On Covid-19of staffs**

Fig 4: Simple bar diagram shows the working experience of staffs

Generalization of knowledge score was calculated using and mean with 95% CI and proportion with 95% CI. Fig 6 Table No.3 shows the level wise percentage of staffs knowledge score on COVID-19.

Table 1. Demographic Profile

Demographic variables		No. of staff members	Column N %
Age Group	20 -30 years	171	54.81%
	30 -40 years	103	33.01%
	40 -50 years	26	8.33%
	>50 years	12	3.85%
Area Of Working	Hospital	138	44.23%
	Institution	144	46.15%
	Community	25	8.02%
	Quarantine centers	5	1.60%
Mode Of Information On Covid-19	Print Media	5	1.60%
	Social Media	34	10.90%
	Electronic Media	4	1.28%
	All of the above	269	86.22%
Working Experience	1-10 yrs	239	76.60%
	11-20 yrs	65	20.83%
	21-30 yrs	5	1.60%
	> 30 yrs	3	0.97%
Do You Receive Training For Working In Covid 19 Area	Yes	58	18.59%
	No	254	81.41%

Table 2. Each question wise knowledge score

Max score	Mean score±SD	% of *knowledge* score	Mean Knowledge score with 95% Confidence interval	Percentage of *knowledge* score with 95% Confidence interval
20	11.09±2.14	55.45%	11.09(10.85 – 11.33)	55.45%(54.25% – 56.65%)

Table 3: Level of Knowledge Score

Level of knowledge score	No. of staffs	%
Inadequate	127	40.71%
Moderate	181	58.01%
Adequately	4	1.28%
Total	312	100.00%

S no.	Grade	Score	Percentage
1.	Inadequate	0-10	0 – 50%
2.	Moderate	11 – 15	51 – 75%
3.	Adequately	16 – 20	76 – 100 %

Demographic variables		Knowledge score						N	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Age Group	20 -30 years	76	44.44%	95	55.56%	0	0.00%	171	$\chi 2$=18.71
	30 -40 years	43	41.75%	59	57.28%	1	0.97%	103	P=0.01** DF=6(S)
	40 -50 years	6	23.08%	18	69.23%	2	7.69%	26	
	>50 years	2	16.67%	9	75.00%	1	8.33%	12	
Area Of Working	Hospital	54	39.13%	83	60.14%	1	0.72%	138	$\chi 2$=6.30
	Institution	57	39.58%	84	58.33%	3	2.08%	144	P=0.39 DF=6(NS)
	Community	15	60.00%	10	40.00%	0	0.00%	25	
	Quarantine centers	1	20.00%	4	80.00%	0	0.00%	5	
Mode Of Information On Covid-19	Print Media	1	20.00%	4	80.00%	0	0.00%	5	$\chi 2$=1.83
	Social Media	15	44.12%	19	55.88%	0	0.00%	34	P=0.93 DF=6(NS)
	Electronic Media	2	50.00%	2	50.00%	0	0.00%	4	
	All of the above	109	40.52%	156	57.99%	4	1.49%	269	
Working Experience	1-10 yrs	100	41.84%	137	57.32%	2	0.84%	239	$\chi 2$=3.31
	11-20 yrs	25	38.46%	38	58.46%	2	3.08%	65	P=0.77 DF=6(NS)
	21-30 yrs	1	20.00%	4	80.00%	0	0.00%	5	
	> 30 yrs	1	33.33%	2	66.67%	0	0.00%	3	
Do You Receive Training For Working In Covid 19 Area	Yes	27	46.55%	28	48.28%	3	5.17%	58	$\chi 2$=10.17
	No	100	39.37%	153	60.24%	1	0.39%	254	P=0.01** DF=2(S)

Fig 5: Pie diagram shows the Training For Working In Covid 19of staffs
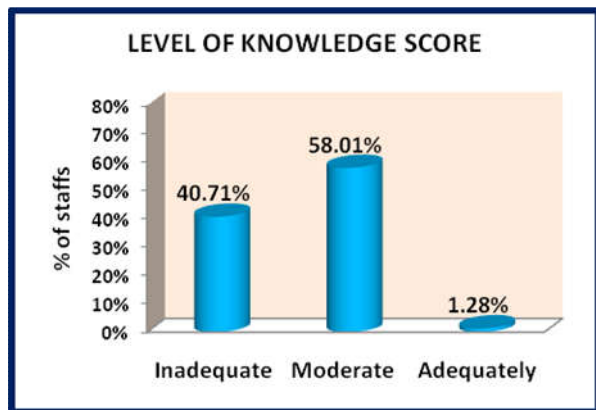

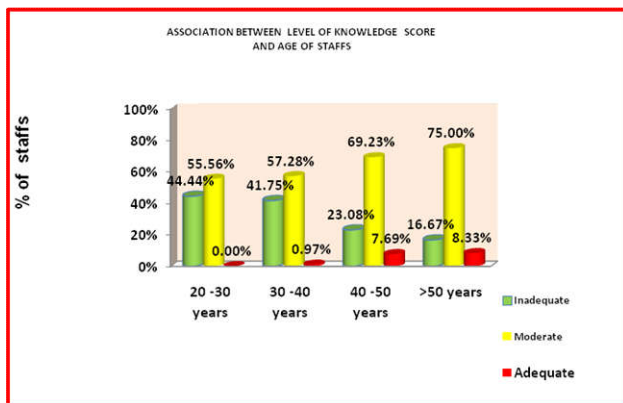**Fig 6: Simple bar diagram shows the level of knowledge score of staffs**

Fig 7: Multiple bar diagram shows the association between level of knowledge score and staffs demographic variables
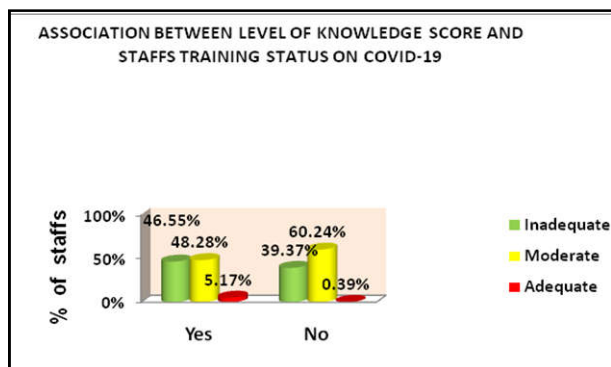

Fig 8: Multiple bar diagram shows the association between level of knowledge score and staffs training status

In general,40.71% of the staffs are having inadequate level of knowledge score, 58.01% of them having moderate level of knowledge score and 1.28% of them are having adequate level of knowledge score. fig 7-8table 4shows the association between the level of knowledge sore and staffs demographic variables. elder aged staffs and training on covid-19 staffs are having more knowledge sore than others. it was assessed using chi square test.

Conclusion

The results of this study shows that the level wise percentage of staff's knowledge scores on COVID-19. In general, 40.71% of the staffsare having inadequate level of knowledge score, 58.01% of them having moderate level of knowledge score and 1.28% of them are having adequate level of knowledge score.

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