

Coastal Staff: Assessment of Personal Discomfort when Wearing Personal Protective Equipment while Caring Covid 19 Patients in a Selected South Indian Coastal Hospital- An Analytical Study

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Key words

Descriptive, Personal Protective Equipment, Personal Discomfort, Staff Nurse, COVID-19.

Abstract

Introduction: Coastal life nurses must wear adequate COVID-19 PPE to safeguard themselves and their sick people from the virus's spread in coastal communities. Nursing care of patients with COVID-19 was the challenging scenario for the nurses. Nurses experienced discomfort due to PPE Kit which was worn during care of patients with COVID-19. A study was conducted to assess the Personal Discomfort experienced by Staff Nurses wearing Personal Protective Equipment's during care of patients with COVID-19 at a selected Hospital, Puducherry. The main objective of the study was to Assess the level of personal discomfort experienced by staff nurses wearing PPE during care of patient with COVID-19 and to compare the difference in the personal discomfort experienced by the staff nurses.

Methods and materials: Quantitative research approach of descriptive research design was used. A total of 100 subjects who fulfilled the inclusion criteria were selected for the study using purposive sampling technique. A structured instrument was used to collect the demographic data and the level of discomfort experienced by the subjects. The data were analysed using descriptive statistics. The findings were discussed based on the objectives.

Results: The result revealed that 95% of the subjects experienced high discomfort due to PPE kit where as 3% intolerable discomfort. Majority of nurses have experienced high discomfort with the mean value ranging from (22-34) which denotes that wearing PPE kit created unpleasant experience for the nurses during care of patients with COVID-19 in a coastal hospital.

Introduction

In Wuhan, China, in December 2019, the coronavirus disease 2019 (COVID-19) was initially identified. And become pandemic within short span of time.^{1, 2} Health care professionals had been advised to wear PPE to prevent the spread of through coming into contact with infected people or a polluted location³. Because of this epidemic, using personal protective equipment (PPE) and practising hand hygiene in healthcare facilities became even more crucial than before. Coastal life nurses must wear adequate COVID-19 PPE to safeguard themselves and their sick people from the virus's spread in coastal communities. By wearing PPE, healthcare workers are shielded against contact with bodily fluids, contagious microbes, and airborne droplet transfer^{4,5}. N95 masks, eye protection (goggles or face shield), gloves, and gowns have all been advised by the US Centres for Disease Control (CDC) as ways to protect healthcare workers from COVID-19.⁶

Clinicians who care for patients infected with coronavirus disease 2019 (COVID-19) must wear a full suite of personal protective equipment, including an N95 mask or powered air purifying respirator, eye protection, a fluid-impermeable gown, and gloves⁷.

When the Corona Virus Disease pandemic of 2019 strikes, it is crucial to protect healthcare workers (HCWs) and wearing personal protective equipment is required (PPE).⁷ The majority of research has concentrated on the skin reactions brought on by gloves, other PPE like gowns, respirator masks, face shields, and goggles that were worn by (HCWs) Health Care Workers for a longer

period of time during the epidemic, and skin irritations brought on by this equipment led to health workers becoming discouraged from using it.⁸

A pandemic was declared by the World Health Organization (WHO) on March 11, 2020 as a result of the disease's rapid global spread.^{9, 10} The total number of COVID-19 affected and deceased patients as of May 31, 2020, was 6,162,399 and 371,035 correspondingly. Iranians contracted the virus 148,950 times between May 30, 2020, and 7734 people died as a result.¹¹.

On of 8 April 2020, the WHO reported that COVID-19 had infected 22,073 medical professionals across 56 nations. In India alone, there are already more than 400 healthcare workers has been diagnosed as COVID-19 in public and private healthcare sectors which emphasizes the importance of personal protective equipment kit while caring patients with COVID-19. Though personal protective equipment kit causes discomfort for the staff nurses it is important to be own to safe-guard the nurses from COVID-19. Hence, the investigator assessed the personal discomfort experienced by the staff nurses wearing PPE during care of patients with COVID-19 to derive the specific strategies to reduce the discomfort¹².

Problem Of TheStatement:

“Assessment of Personal Discomfort Experienced by Staff Nurses wearing Personal Protective Equipment during care of patients with COVID-19 at selected hospital, Puducherry-A Descriptive Study.”

Objectives:

- ❖ Assessment of the level of personal discomfort experienced by staff nurses wearing PPE during care of patient with COVID-19.
- ❖ Compare the difference in the personal discomfort experienced by the staff nurses.

Methods And Materials:

Quantitative Research Approach of Descriptive research design was used for this study. Using purposive sampling methods, a total of 100 people met the inclusion criteria.

for the study were chosen. The Study included staff nurses who were aged between 25-40 years of both sex and worked at COVID ward. Data were collected by interview technique the personal information like age, sex, gender, years of experience, education level, and marital status has been collected and multiple-choice questions were used to assess the personal discomfort experienced by staff nurses. Using descriptive statistics like frequency, percentage mean, and median, the responses were examined. (Wilcoxon test, and mean Whitney test).

Result:

TABLE 1: Assess the Personal Discomfort Experienced by staff nurses wearing PPE.

N= (100)

LEVEL	FREQUENCY	PERCENTAGE
Moderate Discomfort(1-21)	2	2%
High Discomfort (22-34)	95	95%
Intolerable (> 35)	3	3%

Table1 indicates the distribution of discomfort experienced by the staff nurse wearing of personal protective equipment. A total of 95 (95%) subjects out of 100 had high discomfort, 3(3%) had intolerable and 2(2%) had moderate discomfort.

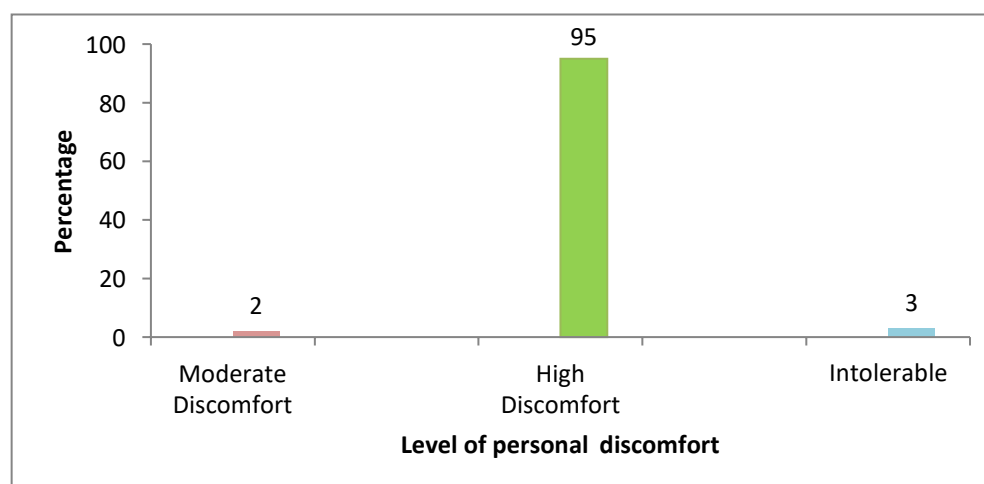


Figure 1: Percentage distribution of personal discomfort experienced by staff nurse wearing PP

Table 2: Comparison of differences in the Personal Discomfort Experienced by staff nurses wearing PPE.

Demographic variables		N	Score				Score	
			Mean	Median	Percentile 25	Percentile 75	MW/WK test	p-value
Age	25-30 yrs	41	28.24	29.5	25	31	1.071	0.170 NS
	31-35 yrs	6	27.33	27	26	28		
	36-40 yrs	53	26.24	28	25	31		
Sex	Male	59	28.27	28	25	31	1188	0.882 NS
	Female	41	28.24	28	25	31		
Marital status	Single	38	28.87	29.5	26	31	986.5	0.172 NS
	Married	62	27.89	28	25	31		
Religion	Hindu	92	28.23	28	25	31	3.072	0.215 NS
	Christian	6	27.33	27	26	28		
	Muslim	2	32.5	32.5	31	34		
Educational status	DGNM	3	29.67	32	25	32	0.926	0.630 NS
	B.Sc.(N)	92	28.24	28	25	31		
	M.Sc.(N)	5	27.8	28	25	30		
Years of experience	1-3 yrs	92	28.23	28	25	31	3.072	0.215 NS
	4-6 yrs	6	27.33	27	26	28		

	7 yrs& above	2	32. 5	32. 5	31	34		
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N= (100)

***MW/WK-** Wilcoxon test/Mean Whitney test

***NS-**Non-significant

TABLE 2 Depicts the compression of differences in the Personal Discomfort Experienced by Staff Nurses wearing PPE. There is no significant association of level of discomfort with

demographic variables like age, gender, educational qualification, Religion, Marital status & years of experience at p- value < 0.05.

Recommendations

Based on findings of the present study, the following recommendations have been made,

- A larger sample size can be used to carry out a study like this one in other regions of the nation.
- Interventional measures can be used to undertake the same study.
- The research might be carried out throughout time.
- The study can be done to identify the health hazards the risk of wearing PPE during COVID-19 on large scale.

groups of demographic variables inferred that perception of personal discomfort was lesser in the age group between 25- 30 years with mean of 28-24 than in the age group 36-40 years (mean= 26-24) which was not statistically significant. A total of 59 male nurses experienced more discomfort due to PPE (mean =28.27) than female nurses (mean=28.24). With regard to marital status 62 (mean=28.89) married nurses experienced lesser personal discomfort than 38 singles (mean =28.87). Perception of personal discomfort experienced by nurses of Muslim religion was intolerable (mean= 32.5) than Hindu (mean 28.23) and Christian (mean 27.33). Nurses qualified with diploma in nursing experienced more personal discomfort (mean= 28.24) than with M.Sc.(N) (Mean=27.8). Nurses with the experience of 7 years and above perceived intolerable discomfort with regards to PPE Kit and above (Mean=32.5) than with the nurse of 1-3 years' experience (mean=28.23) and 4-6 years of experience (mean=27.23).

Discussion:

Assessment of personal discomfort experienced by staff nurses wearing PPE revealed that 95 (95%) nurses out of 100 perceived right discomfort whereas 3 (3%) perceived it as intolerable. It interferes with the fact that nurses experienced high discomfort while wearing PPE. Though PPE is required to protect the nurses from infection it increased their discomfort and adversely affected their health.

This study finding is substantiated by the study conducted by Andrew Hunt (2022) has on Personal protective.

Mann- Whitney U test to compare the difference between independent.

equipment for COVID-19 among healthcare workers in an emergency department, revealed that More than 50% reported light-headedness or headache and approximately 30% reported feeling dizzy, faint, or weak.

A descriptive, cross-sectional study which was carried out to determine the level of Funeral home staff in Lagos State are trained in safety precautions, use PPE, and are aware of these precautions. by Dorosário MS revealed that the staff has a minimum of 50% knowledge on available person devices and safety procedures in their workplace however the perception to constant use of this device below acceptable level except the use of apron (81.25%), gloves (81.25%) hand washing (87.5%).¹³

Another study conducted by Ntoui F to assess the physiological effects of the prolonged use of PPE on Health care workers revealed the significant difference in the physiological parameters post-doffing compared with baseline: Heart rate ($p < 0.001$); oxygen saturation at level ($p < 0.001$); PI ($p < 0.001$). Rating of perceived score showed increased discomfort with continuous use of N95 FFR.¹⁴

While no precise nutrition or medication can prevent or cure COVID-19, a healthy diet and lifestyle can improve overall immune function. Proper hydration, wholesome meals with adequate protein, vitamins, and minerals, and regular physical activity can all aid the body's defences in their performance. Antivirals and steroids, for example, may be prescribed to treat COVID-19 symptoms and side effects,

but their use should be closely monitored by a healthcare professional. Vaccination is the most effective method of preventing serious illness and virus transmission now^{15,16,17}. It is evident from the above that adding comfort to nursing personnel is essential and wearing PPE kit causes lot of discomfort among nurses at varying level.

Conclusion:

This study's findings suggest that the use of PPE by coastal life nurses can cause discomfort and skin erosion, especially when worn for long periods of time. The study revealed that 95% of the subjects experienced high discomfort due to PPE kit whereas 3% intolerable discomfort.

To reduce these risks, healthcare organizations should provide active infection control and protective equipment training. This can help to ensure that healthcare professionals working in a South Indian coast tertiary care hospital are better equipped to protect themselves and their patients from the spread of infection. Furthermore, healthcare organizations need to consider shortening working hours and providing adequate protective products as well as psychological support to alleviate the discomfort.

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Conflict of interest – Nil

Ethical issues – minimal – observative study

Consent – Yes

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