ORIGINAL RESEARCH PAPER

Nursing

ASSESS THE KNOWLEDGE ABOUT INFECTION CONTROL PROTOCOL IN COVID-19 AMONG STAFF NURSES AT SAVEETHA MEDICAL COLLEGE AND HOSPITAL

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ABSTRACT

In earlier December, first case of pneumonia of unknown cause originated in Wuhan, capital city of Province Hubei, China, and on 31 December 2019, with emergence of more such cases, Wuhan gained attention by World Health Organization .Protection of nurses and prevention of intra-hospital transmission of infection are important aspects in epidemic response and this requires that nurses must have updated knowledge regarding source, transmission, symptoms and preventive measures. Literature suggest that lack of knowledge and misunderstandings among nurses leads to delayed diagnosis, spread of disease and poor infection control practice. Preventing intra-hospital transmission of the communicable disease is therefore a priority. Hence the study aimed to assess the knowledge about infection control protocol in Covid-19 among staff nurses at Saveetha Medical College and Hospital. Univariant descriptive design was employed and 50 nurses were selected as samples based on the inclusion criteria. Researcher introduced to the subject and developed the rapport with them. Socio-demographic data was collected from staff nurses by e-Google form method and knowledge assessment was done by structured questionnaire related to infection control protocol in Covid-19 through e- Google form.The study reveals that majority of staff nurses 30(60%) had adequate knowledge, 17 (34%) had moderately adequate knowledge and 03(06%) had inadequate knowledge regarding infection control protocol in Covid-19. The demographic variable of staff nurses had shown statistically significant association with the level of knowledge on infection control protocol in Covid-19 at $p<0.05$ level. The other demographic variables had not shown statistically significant association with the level of knowledge on infection control protocol in Covid-19 among staff nurses. The study concluded that useful in assessing the level of knowledge on infection control protocol in Covid-19 among staff nurses. It can also be concluded that the main strategies adopted by the hospital in nurses knowledge was an adequate to prevent the infection by using infection control protocol in Covid-19.

INTRODUCTION:

Health care professionals are constantly exposed to microorganisms. Many of which can cause serious or even lethal infections vinothini(2016)[1]. Nurses in particular are often exposed to various infections during the course of carrying out their nursing activities Mehta,Y (2014)[2]. One of such efforts is the introduction of an evidence-based concept of "My five moments for hand hygiene" by World Health Organization Adegboye(2018)[3]. These five moments that call for the use of hand hygiene include the moment before touching a patient, before performing aseptic and clean procedures, after being at risk of exposure to body fluids, after touching a patient, and after touching patient surrounding. Nurses constitute the largest percentage of the health care workers and they are the "nucleus of the health care system". Because they spend more time with patients than any other health care workers, their compliance with hand washing guidelines seems to be more vital in preventing the disease transmission among patients Iliyasu, G (201)[4].

In earlier December, first case of pneumonia of unknown cause originated in Wuhan, capital city of Province Hubei, China, and on 31 December 2019, with emergence of more such cases, Wuhan gained attention by World Health Organization Hui Jin(2020)[5]. The pathogen identified was named as novel coronavirus, currently called as severe acute respiratory syndrome corona virus-2, an enveloped and single stranded RNA virus which has phylogenetic resemblance to SARS-COV-1 WHO (2020)[6]. Owing to rapid spread of this deadly virus from epicenter to number of countries, WHO declared it as public health emergency of international concern   on January 30, 2020. Later, due to uncased fast spread, severity of illness, the continual escalation in number of affected countries, cases and causalities,WHO declared coronavirus disease 2019 a global pandemic on 11 March 2020. To date 12 April, 2020, the COVID-19 have spread to all countries and territories accounted for 1,790,550 laboratory confirmed cases and 109,654 mortalities also attributed to this deadly pathogen M.Zhang (2020)[7].

Ensure that travel history and history of contact with any suspect, probable or confirmed cases of COVID-19 are assessed early for any patients presenting with symptoms of respiratory illness and/or fever M.Saqlain(2020)[8]. Patients meeting clinical and epidemiological criteria for suspected and probable cases should be isolated pending test results. For people with an acute respiratory illness who have no epidemiological risk factors, clinical judgment and local risk assessment should be used in relation to isolation pending test results M Siful Islam(2020)[9]. Clinical judgment is necessary to determine whether to isolate patients to reduce transmission of whatever acute respiratory infection is causing their illness, pending test results and clinical resolution. Manage routine care of suspect, probable and confirmed cases of COVID-19 using droplet, contact and standard precautions wear a N-95 mask when entering a room where patients suspected or confirmed of being infected with 2019-nCoV are admitted and in any situation of care provided to a suspected or confirmed case use a particulate respirator at least as protective as a US National Institute for Occupational Safety and Health (NIOSH)-certified N95, European Union   standard FFP2, or equivalent, when performing aerosol-generating procedures Abdulraheem IS(2020)[10].

The fact that healthcare workers are at risk of infection in the epidemic chain is a critical issue because healthcare workers help in controlling the outbreak. Therefore, all possible actions must be taken to control the spread of the infection to healthcare workers, first by identifying the risk factors for infection and then by taking appropriate measures to reduce these risks. It is well established that transmission of the disease among health care workers is associated with overcrowding, absence of isolation room facilities, and environmental contamination. Efstathiou G(2020)[11].

REVIEW OF LITERATURE:

Adel Harb, et.al (2020) had conducted a study to identify nursing skills and knowledge deficits related to COVID19 to provide nurses with an education that enables them to

provide safe and effective patient care. A self-administered questionnaire containing socio-demographic data, knowledge domain, and skills domain (questions indicating their current knowledge and skills in COVID19 was distributed. The results revealed that the majority of nurses at E1 cluster hospitals (n=1022) had brilliant knowledge and skills about COVID-19. The major performance gap was knowledge deficit related to infection control standards precautions. Nurses should enhance their knowledge related to infection control standard precautions and further studies are still needed to assess nurses' attitudes as equal to knowledge and skills.

Sai Ravi Teja, et.al (2020) had conducted a study assess the knowledge of COVID-19 among the nursing and allied health care professionals. A cross sectional study on knowledge of COVID-19 was conducted among nursing and allied health care professionals working in tertiary care hospital. A structured questionnaire comprised of 25 questions developed by investigators was administered to 177 health care professionals that includes nursing and allied health professionals working in a tertiary care hospital. Among the 177 nursing and allied health care professionals, majority 92.1% of them has adequate knowledge regarding the present global pandemic and 7.9% had moderate knowledge. This study concludes that nursing and allied health care services professionals in tertiary center has adequate knowledge regarding COVID-19 pandemic.

Saiful Islam, et.al (2020) had conducted a study to review the current evidence on the transmission dynamics and on pathogenic and clinical features of COVID-19 to critically identify any gaps in the current infection prevention and control (IPC) guidelines. In this study, we reviewed global COVID-19 IPC guidelines by organizations such as the World Health Organization (WHO), the US Centers for Disease Control and Prevention (CDC), and the European Centre for Disease Prevention and Control (ECDC). Guidelines from 2 high-income countries (Australia and United Kingdom) and from 1 middle-income country (China) were also reviewed. The results revealed that nosocomial transmission of SARS-CoV-2 in healthcare settings occurs through droplets, aerosols, and the oral–fecal or fecal–droplet route. However, the IPC guidelines fail to cover all transmission modes, and the recommendations also conflict with each other. Most guidelines recommend surgical masks for healthcare providers during routine care and N95 respirators for aerosol-generating procedures. However, recommendations regarding the type of face mask varied, and the CDC recommends cloth masks when surgical masks are unavailable.

OBJECTIVES
1) To assess the knowledge about infection control protocol in Covid-19 among staff nurses at Saveetha Medical College and Hospital.
2) To associate the level of knowledge about infection control protocol in Covid-19 among staff nurses with selected demographic variables.

METHODS AND MATERIALS:
The research approach adopted in the study was quantitative approach by using Univariant descriptive research design. After obtaining the permission from the Principal Saveetha College of Nursing, the study was conducted from 27/07/20 to 31/07/20. A total of 50 nurses who are working at Saveetha Medical College and Hospital were selected as samples based on the inclusion criteria. Researcher introduced to the subject and developed the rapport with them. Socio-demographic data was collected from staff nurses by e-Google form method and knowledge assessment was done by structured questionnaire related to infection control protocol in Covid-19 through e- Google form. Data were analyzed by using descriptive and inferential statistics.

RESULTS AND DISCUSSION:
The table 1 reveals the demographic variables of the participants. Out of 50 nurses majority of them are females 28(56%), males are 22(44%), most of them are belongs to an age group of 20-29 years 15(30%), and 30- 39 years 15(30%) members, majority of them are married 28(56%), most of them belongs to the religion Hindu 39(78%). Most of them location of work is Covid -19 ward 35(70%), then ICU 10(20%) and Emergency departmen 05(10%). Majority of them have 1-5 years of experience 18(36%), 11-15 years of experience are 16(32%), 6- 10 years are 12(24%) and more than 15 years are 04(08%). The table 2 depicts that majority of staff nurses 30(60%) had adequate knowledge, 17 (34%) had moderately adequate knowledge and 03(06%) had Inadequate knowledge regarding infection control protocol in covid 19. The table 3 shows that the demographic variable training on infection control protocol in covid-19 had shown statistically significant association with the level of knowledge on infection control protocol in Covid-19 at p<0.05 level. The other demographic variables had not shown statistically significant association with the level of knowledge on infection control protocol in Covid-19 among staff nurses.

This study was supported by Gohel, K. H., et.al (2020)[12]. had conducted a Knowledge and perceptions about COVID-19 among the medical and allied health science students in India.Total, 97.95% (715/730) participants completed the survey. High proportion of students were from pharmacy (45.73%) followed by medical (22.52%), physiotherapy, nursing and dental background. Majority of participants were having adequate knowledge while about 18% had partial knowledge about the symptoms of severe COVID-19 cases. Students have shown a positive perception of COVID-19 prevention and control while few invalid responses related to the use of herbal medicines or garlic were noted. About 50% had rightly stated that, the antibiotics and vaccine are not effective in COVID-19 infection at present. Jin, Y., Huang, Q. et.al (2020)[13]. had conducted a Perceived infection transmission routes, infection control practices, psychosocial changes, and management of COVID-19 infected healthcare workers in a tertiary acute care hospital in Wuhan. The main perceived mode of transmission was not maintaining protection when working at a close distance and having intimate contact with infected cases. Positive psychological intervention is necessary. This study was supported by Ayed,et.al (2015)[14]. had conducted a Knowledge and Practice of Nursing Staff towards Infection Control Measures in the Palestinian Hospitals. the study revealed that it can be concluded that inspite of having good practice level regarding infection control, nurses had fair knowledge level. Alice W , et.al (2015)[15]. had conducted a study Health Care Workers Adherence to Infection Prevention Practices and Control Measures. The study revealed that there was approximately 6.7% nosocomial infections rate among hospitalized patients. Barriers to IPPC compliance among the health care workers included frequent shortage of water, inadequate updates on IPPC through continuing professional education and inactive IPPC committee. The study concluded that there was adequate compliance with IPPC, though there were challenges to implementation that needed to be addressed.

Table 1: Frequency and percentage distribution of demographic variables of the Staff Nurses.

N= 50

S. NO	DEMOGRAPHIC-VARIABLE	FREQUENCY	PERCENTAGE
1.	**Gender**		
	a) Male	22	44%
	b) female	28	56%
2.	**Age in yrs**		
	a) 20-29 yrs	15	30%
	b) 30-39 yrs	15	30%
	c) 40-49 yrs	12	24%
	d)50-59 yrs	08	16%

3.	Marital status		
	a)Married	28	56%
	b)Single	18	36%
	c)Widow	04	08%
	d)Divorced/separated	00	00
4.	Religion		
	a) Christianity	10	20%
	b) Islam	01	02%
	c) Hindu	39	78%
6.	Location of work		
	a) Covid-19 ward	35	70%
	b) ICU	10	20%
	c) Emergency ward	05	10%
	d) Others	00	0%
7.	Years of service		
	a) 1-5 yrs	18	36%
	b)6-10 yrs	12	24%
	c)11-15 yrs	16	32%
	d)more than 15 yrs	04	08%

1.	Moderately adequate	17	34%
2.	knowledge	30	60%
3.	adequate knowledge	03	06%
	Inadequate knowledge		
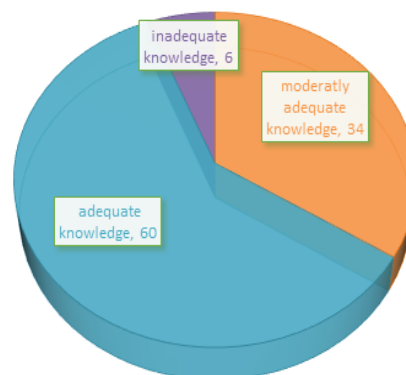
Table 2:Frequency and percentage distribution of level of knowledge regarding infection control protocol in Covid-19 among staff nurses.

LEVEL OF KNOWLEDGE ON INFECTION CONTROL PROTOCOL IN COVID-19

inadequate knowledge, 6

moderatly adequate knowledge, 34

adequate knowledge, 60

Figure- 1: Percentage distribution of level of knowledge regarding infection control protocol in Covid-19.

N= 50

S.NO	LEVEL OF KNOWLEDGE	PRE TEST	
		N	%

Table 3: Association of the level of knowledge of Staff nurses with selected demographic variables.

S.no	Demographic variables	adequate knowledge		Moderately adequate		Inadequate knowledge		Chi square
		No	%	No	%	No	%	
1.	**Gender**							2.94
	a) Male	01	02%	12	24%	09	18%	Df=2 NS*
	b) female	02	04%	18	36%	08	16%	P<0.05
2.	**Age in yrs**							
	a) 20-29 yrs	02	04%	10	20%	03	06%	
	b) 30-39 yrs	01	02%	10	20%	04	08%	0.12
	c) 40-49 yrs	00	00	08	16%	04	08%	Df= 6 NS*
	d)50-59 yrs	00	00	02	04%	06	12%	P<0.05
3.	**Marital status**							
	a)Married	02	04%	14	28%	12	24%	
	b)Single	00	00	15	30%	03	06%	8.34
	c)Widow	01	02%	01	02%	02	04%	DF=6 NS*
	d)Divorced/separated	00	00	00	00	00	00	P<0.05
4.	**Religion**							
	a) Christianity	01	02%	06	12%	03	06%	1.89
	b) Islam	00	00	00	00	01	02%	DF=4 NS*
	c) Hindu	02	04%	24	48%	13	26%	P<0.05
5.	**Location of work**							
	a) Covid-19 Ward b)	02	04%	19	38%	14	28%	1.15
	b) ICU	01	02%	04	08%	00	00	DF=6 NS*
	c) Emergency ward	00	00	07	14%	03	06%	P<0.05
6.	**Years of service**							
	a) 1-5 yrs	00	00	13	26%	05	10%	
	b)6-10 yrs	01	02%	09	18%	02	04%	2.56
	c)11-15 yrs	01	02%	05	10%	10	20%	Df= 6 NS*
	d)more than 15 yrs	01	02%	03	06%	00	00	P<0.05

Df= degree of freedom, S*= Significant, NS*= Non- significant

CONCLUSION:
The study findings concluded that majority of staff nurses 30(60%) had adequate knowledge, 17 (34%) had moderately adequate knowledge and 03(06%) had Inadequate knowledge regarding infection control protocol in covid 19. The table 2 depicts that majority of staff nurses 30(60%) had adequate knowledge, 17 (34%) had moderately adequate knowledge and 03(06%) had Inadequate knowledge regarding infection control protocol in covid 19. Based on the current study findings further studies can be conducted on the larger scale, another study can be undertaken to compare the effect of teaching programmes regarding infection control protocol among staff nurses.

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