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Evaluation of nurses' practices related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19 in Baghdad Teaching Hospital

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Abstract: This study aim to evaluate of nurses' practices related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19, A cross-sectional study design is carried out , A non – probability (purposive) sample of (60) nurses (males and females), who were working in Baghdad Teaching Hospital from different units. The result showed that nurses have low level of practices i all items related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19. This study recommended of the Ministry of Health to increase the number of training courses regarding COVID-19 across Iraq to keep and enhance the practice about COVID-19.

Keyword: Evaluation; nurses' practices; personal protective equipment; COVID-19.

Introduction

According to the World Health Organization (WHO), infectious diseases are the third leading cause of death globally The situation of emerging epidemics around the world poses a significant danger to individuals and societies. The current and most important pandemic in recent times is the COVID-19 pandemic. Due to its rapid spread, virulence, death in severe cases, and unknown treatment, it poses a significant risk to human life and health. COVID-19 causes various degrees of problems due to its enormous impact on the health of the general community (Taghaddom et al.,2020).

In order to prevent or lessen occupational hazards and accidents at work, personal protection equipment (PPE) is utilized. These items are designed to safeguard users against the physical, chemical, and biological elements present in the workplace. Due to exposure to highly infectious bodily fluids and droplet nuclei in the near-patient area, healthcare personnel is at significantly greater risk of infection than the general population with the onset of highly infectious epidemics like SARS and Ebola virus illnesses. In order to lower the danger of transmission, personal protective equipment must be used when treating and caring for such individuals(Verbeek et al.,2016).

The use of these protective equipment has gotten attention among healthcare workers during the global public health emergency due to the coronavirus disease-2019 (COVID-19) that appeared in December 2019. Nurses in the front line are highly at risk of contracting COVID-19 while caring for the patients, as they have a prolonged duration of exposure while performing many care interventions including aerosol-generating procedures. Of the frontline nurses working in the emergency department of a tertiary center, 44% perceived that their workplace is not safe against COVID-19 infection spread and 86% feared infecting family members(Jose et al.,2020).

The use of personal protective equipment is crucial to preventing the cross-transmission of the virus because the disease is transmitted through respiratory droplets and indirect contact with spores, as has been established5-7. The PPEs include the tools that guard against the deadliest infectious secretions from patients coming into contact with the mouth, nose, eyes, ears, bare skin, and susceptible body parts including the head and hands(Chen et al.,2021)

In order to prevent the transmission, the nurses are using personal protective equipment for a prolonged duration while caring for COVID-19 patients; however, PPE may cause serious skin problems due to long-term sealing, friction and pressure, physical strain (dehydration, heat, and exhaustion), and emotional problems, such as physical isolation, fear about infections. Hence, constant vigilance regarding infection control and follow-up rehabilitative measures are essential to enhance the morale and productivity of the healthcare workers(Haegdorens et al.,2022).

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Methodology:
Design of Study:
A cross-sectional study design is carried out to evaluate nurses' practices related to personal protective equipment Regarding Preventive Measures of Transmission of
COVID-19
Sample of the study
A non –probability (purposive) sample of (60) nurses (males and females), who were working in Baghdad Teaching Hospital from different units.
Setting of the Study
The study is conducted at Baghdad Teaching Hospital (Emergency unit, Hemodialysis unit, Intensive care unit, Medical units, surgical units, Cardiac care unit and Respiratory unit).
Study Instrument :
To reach the objectives of the study the researcher constructs the study instrument which consists of (2) Subdomain which are:
Part I: Demographic characteristics of the study sample.
Part II: Evaluate nurses' practices related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19, which consist of two subdomains:
First subdomain: Wearing a surgical mask, Consist of (4) items .
Second subdomain: Others personal protective equipment, Consist of (11) items.
Data collection
The practices of nurses' practices related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19 were evaluated by using observational checklist sheet, were the researcher observe the nurse where they working and give them score in each observation where the total observation was 3 times. All study participants (60 nurses) completed the test.
Statistical Analysis
The questionnaires were analyzed using SPSS version 24 and Microsoft Excel (2010). Descriptive data analysis by Tables (Frequencies, and Percentages), and summary statistics tables including Observed Frequencies, Percent, Mean of score (MS), as well as scoring scales of two categories (Correct, and Incorrect), of MCQ scoring scales, which were represented with integer numbers (1, and 0), respectively.
Result

Table (1): Distribution of the studied groups according to socio-demographic characteristics.

Variable	Classes	No	%
Gender	Male	18	30
	Female	42	70
Age Groups Yrs.	20 - less than 30	30	50
	30 -less than 40	16	26.6
	40 – 49	14	23.4
Educational level	Nursing high school graduate	19	31.6
	Nursing Diploma graduate	27	45
	Nursing graduate	14	23.4
Current workplace	Emergency unit	12	20
	Intensive care units	8	13.3
	Surgical units	6	10
	Medical units	8	13.3
	Hemodialysis unit	11	18.4
	Respiratory units	9	15
	Cardiac care unit(CCU)	6	10
Years of service in the	1-5 Years	24	40

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nursing field	6-10Years	12	20
	11-15 Years	10	16.7
	16-20 Years	8	13.3
	More than 20 years	6	10
Participation in courses related to corona virus:	No	5	8.4
	Yes	55	91.6
Do you educate yourself with specialized knowledge in your field of work in a self-reliant manner?	No	5	8.4
	Yes	55	91.6

%: PERCENTAGE, SDCv Socio-Demographical Characteristics variables

Result showed that highest percentage of participants were Female(70%) Nursing Diploma graduate(45%), their current workplace Emergency unit (20%), have from 1-5 Years of service in the nursing field(40%) , (91%) of them answer that they participant in courses related to corona virus, and (91.6%) of them answer that they educate therself with specialized knowledge in their field of work in a self-reliant manner.

Table (2): Evaluate of nurses practice related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19 (Subdomain : regarding Wearing a surgical mask)

Items	MS of 1ST.Obserev	MS of 2ST.Obserev	MS of 3ST.Obserev	total MS
1-Examine the muzzle to make sure it is not torn or punctured	0.35	0.40	0.45	0.40
2-Examine the muzzle to make sure it is not torn or punctured	0.55	0.63	0.62	0.60
3-Ensure that the correct side of the mask is directed outwards (the colored side)	0.77	0.80	0.83	0.83
4-Put the mask on the face Squeeze the metal bar or the reinforced end of the muzzle to take the shape of your nose, and pull the lower part of the muzzle to cover the mouth and chin	0.54	0.55	0.50	0.53

M.S; Mean of score .

Result showed that nurses have low mean of score regarding wearing a surgical mask of all items, Where total mean of score for item1=0.40 .item2= 0.60, item=0.83 , and item4 =0.53

Table (3): Evaluate of nurses practice related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19 (Subdomain : Others personal protective equipment)

Items	MS of 1ST.Obserev	MS of 2ST.Obserev	MS of 3ST.Obserev	MS
1- Wear a face shield	0.35	0.40	0.45	0.13
2-Wear clean gloves	0.55	0.63	0.62	0.47
3- Wear a N95 mask	0.77	0.80	0.83	0.20
4-Wear a medical gown –gown	0.54	0.55	0.50	0.27
5-Wear eye protection –glasses	0.40	0.35	0.39	0.37
6-Wear a hair cover	0.30	0.33	0.36	0.33
7-Always remove protective equipment carefully	0.41	0.44	0.44	0.43

8-Wash hands with soap and water or use an alcohol-based hand rub	0.77	.076	0.87	0.80
9-Wash the back and palms of the hand	0.63	0.63	0.63	0.63
10-Wash between fingers and nails	0.65	0.69	0.66	0.67
11-Rinse hands together with clean water	0.77	0.77	0.77	0.77

M.S; Mean of score .

Result showed that nurses have low mean of score regarding wearing a surgical mask of all items.

DISCUSSION

Result in table (1) showed that highest percentage of participants (70%) were female, this result agree with study done by (Tadesse, 2020) is a cross-sectional study show that 58.1% of the participants who are female .

Half of participants were within age group(20-less than 30 years), Study done by (Kim., et al.2021) shows that the high percentage of nurses ranged (48%) in age from (20-29) years.

Regarding of educational level , (45%) of participants were with Nursing Diploma graduate. Study done by (Kafle et al., 2020, that found that the high percentage (43.5%) of nurses were diploma

Regarding of current place , highest percentage (20%) of participants work in emergency unit .Study done by (Danielle , et al.,2020) that show that the high percentage of nurses (21.5%) were working at emergency department .

Regarding Years of service in the nursing field , (40%) of participants have (1-5) years .Study by (saqlain,et al.,2020) that found the high percentage of nurses who have (>5 years) of experience.

Regarding Participation in courses related to corona virus, highest percentage of participants (91.6%) answer yes .This result disagree with study conducted by (Abou Ramadan, and Eid , 2021) which shows that the high percentage of nurses didn't participation in training program.

Regarding)Do you educate yourself with specialized knowledge in your field of work in a self-reliant manner?) highest percentage(91.6%)of participants answer yes.

Table(2,3) showed that nurses have low mean of score related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19 in all items . This result agree with study done by (Anwar., et al ,2021) that show that the nurses have low mean of score regarding personal protective equipment to protect against COVID-19

Conclusion

Nurses low level of practices related to personal protective equipment Regarding Preventive Measures of Transmission of COVID-19

Recommendation:

- Recommendation of the Ministry of Health to increase the number of training courses regarding COVID-19 across Iraq to keep and enhance the practice about COVID-19.
- The need for care guidelines with ongoing interventional programs to enhance and refresh Nurses' practice about the Preventive Measures of Transmission of COVID-19 , these Guidelines could be printed and distributed by hospitals in the specific areas for use as a reference.

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