Maternity Staff Nurses' Knowledge and Compliance for Protective Measures against Corona Virus

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Abstract

Background: Healthcare workers (HCWs) especially nurses are the backbone of the healthcare system and a skilled and healthy workforce is vital during a health crisis, such as the present coronavirus disease 2019 (COVID-19) pandemic. So, studying nurses' knowledge of COVID-19 and compliance with protective measures is necessary. **Aim of the study:** this study aimed to assess maternity staff nurses' knowledge and compliance for protective measures against coronavirus. **Study design:** A descriptive study design was used. **Sample:** Purposive sample of 76 maternity staff nurses was recruited from Obstetrics and Gynecology Departments, and Maternal child health centers based on certain inclusion criteria**. Setting:** The study was conducted at the Obstetrics and Gynecology Department of three governmental hospitals in El-Fayoum governorate, (Fayoum General Hospital, university hospital, and Itsa Central Hospital) and three from total five Maternal child health centers in El-Fayoum city (El sheikh Hassan, El hadka, El sad el aaly). **Two tools of data collection were used**. I): Arabic structured interviewing questionnaire sheet and II) Maternity staff nurses' Compliance scale for protective measures against coronavirus. **Result** of the study indicated that 73.7% of maternity nurses had satisfactory knowledge of COVID-19 infection and only 35.5% of maternity nurses had compliance with protective measures against coronavirus. **Conclusion:** nearly three-quarters of maternity nurses had satisfactory knowledge of COVID-19 infection, and nearly two-thirds of maternity nurses hadn't compliance with protective measures against coronavirus. **Recommendation:** Design and implement a motivational program for maternity staff nurses to promote their compliance with protective measures during the covid-19 pandemic. Also, recommend further research to study barriers to compliance with protective measures among maternity staff nurses during the covid-19 pandemic.

Keywords: Maternity Staff Nurses- Knowledge- Compliance-Protective Measures - Coronavirus.

Introduction

Coronavirus disease 2019 (COVID -19) is a global public health threat and has evolved to become a pandemic crisis around the world, which is caused by the severe acute respiratory syndrome, coronavirus 2 (SARS-CoV-2). In response to this serious situation, COVID-19 was declared as a public health emergency of international concern by the World Health Organization (WHO) on January 30 and called for collaborative efforts of all countries to prevent the rapid spread of COVID-19 **(Ferdous et al., 2020).**

Covid19 as a pandemic crisis affected many cases in Egypt and worldwide. As of 22 November 2021, there have been 350,397 confirmed coronavirus disease 2019 (COVID-19) cases and 19,933 COVID-19 related deaths in Egypt and globally, there have been 256,637,065 confirmed cases of COVID-19, including 5,148,221deaths, as reported by the World Health Organization **(WHO, 2021).**

According to current evidence, the transmission of COVID-19 occurs mainly through respiratory droplets and contact with contaminated surfaces. With an incubation period that lasts 2–14 days, the spread of the disease in the absence of symptoms is possible; however, symptomatic people are the most contagious. Airborne transmission may also be possible in specific circumstances and settings when aerosol-generating procedures or treatments are performed **(Pascarella et al., 2020).**

Furthermore, the reported illness has been characterized by a wide clinical feature ranging from asymptomatic/mild symptoms to severe illness and mortality. Common symptoms include fever, cough, and shortness of breath. In more severe cases, the infection can cause pneumonia, severe acute respiratory syndrome, kidney failure, and even death **(Cennimo, 2020).**

Recent studies indicate that older people are at higher risk than children who might be less likely to become infected, or if so, may show milder symptoms or even asymptomatic infection. Persons with pre-existing medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are likely to develop severe illness and require admission to the hospital; they might also need critical care or respiratory ventilation in some cases **(Poston, Patel& Davis, 2020).**

Several COVID-19 vaccines have been approved and distributed in various countries, which have initiated mass vaccination campaigns. Other preventive measures include physical or social distancing, quarantining, ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face. The use of face masks or coverings has been recommended in public settings to minimize the risk of transmissions. While work is underway to develop drugs that inhibit the virus, the primary treatment is symptomatic. Management involves the treatment of symptoms, supportive care, isolation, and experimental measures **(Raoult et al., 2020).**

Healthcare workers (HCWs) are at the frontline defense against the coronavirus disease 2019 (COVID-19) pandemic. Health-care workers are crucial to any healthcare system. During the ongoing COVID-19 pandemic, healthcare workers especially nurses are at a substantially increased risk of becoming infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and could come to considerable harm as a result. Moreover, nurses are responsible for patients' essential treatment and care **(Tien et al., 2021).**

Thus, nurses should have current and accurate knowledge of COVID-19 so they can first know exactly how to receive, assess, and provide quality care and education for patients with a possible or confirmed case of COVID-19; they should also know the steps to take care of their own health and safety to avoid getting the infection (American Nurses Association **(ANA, 2020).**

Significance of the study:

Coronavirus disease or SARS-CoV-2 is the rapidly emerging pandemic in the present world. Coronavirus caused huge number of mortality and morbidity which is about 50 million affected cases and 1,254,023 deaths globally. In Egypt 108,530 affected cases and 6,329 death by November **(WHO, 2020)**

Furthermore, 10 percent of all cases globally are health care workers, the International Council of Nurses **(ICN)** analysis suggests, that more than 2 million health care workers worldwide could have been infected with coronavirus. Around 1500 nurses have died from coronavirus all over the world by October 2020 **(ICN, 2020).** Therefore, the researcher recommended this study to assess maternity staff nurses' knowledge and compliance for protective measures against coronavirus.

Aim of the study

This study aimed to assess maternity staff nurses' knowledge and compliance for protective measures against coronavirus.

This aim was attained through:

1-Assessment of maternity staff nurses' level of knowledge regarding coronavirus.

2-Evaluation of maternity staff nurses' level of compliance for protective measures against coronavirus.

Research questions:

1- What is the maternity staff nurses' level of knowledge regarding coronavirus?

2- Do the maternity staff nurses have compliance for protective measures against coronavirus?

Subjects and Methods:

1-Administrative design

An official letter including the title and purpose of the study was issued by the dean of the faculty of Nursing, Fayoum University, and

submitted to the director of the study settings for conducting the study.

Ethical consideration

The research approval was obtained from the Scientific Research Ethical Committee in the Faculty of Nursing at Ain Shams University before starting the study. Approval for conducting the study obtained from the study settings. An oral consent of the participants in the current study was taken after the purpose of the study was clearly explained to each nurse. The researcher assured maintaining anonymity and confidentiality of the subject data. Every nurse had the right to withdraw from the study at any time and without giving any reasons. There was no harm was occurred to maternity nurses.

2- Technical design

The technical design used for the study involved the following items; research design, setting of the study, the subjects, and the tools used for data collection.

Research design:

A descriptive research design was utilized to fulfill the aim of this study.

Setting:

The study was conducted at the Obstetrics and Gynecology Department of three governmental hospitals in El- Fayoum governorate, (Fayoum General Hospital, university hospital, and Itsa Central Hospital) and three from total five Maternal child health centers in El- Fayoum city (El sheikh Hassan, El hadka, El sad el aaly).

Subjects:

Type and size of the sample: A purposive sample was used to recruit 76 maternity staff nurses. The sample size is calculated based on the following Epi info 7 program was used to estimate the sample size using the following parameters: Population size is 98 nurses · Expected frequency working on morning shift 60%. Acceptable error 5%. Confidence coefficient 95%· Minimal sample size 76

The study sample was selected according to the following criteria; Maternity staff nurses who did not receive any theoretical or practical training regarding coronavirus. Maternity staff nurses who had more than one year of experience in the previously mentioned setting.

Tools for data collection:

Two tools of data collection were used:

Tool I: Arabic structured interviewing questionnaire that was designed by the researcher after reviewing the current related literature. It was written in a simple Arabic language, it was divided into two parts and consisted of (19) questions of multiple choices questions, as well as open and close-ended questions.

Part I: was designed to assess personal data such as age, level of education, place of work, and years of experience (4 questions).

Part II: was designed to assess maternity staff nurses' level of knowledge regarding coronavirus it was developed based on reviewing literature of **Bhagavathula et al. (2020), Asemahagn (2020), Zhang et al. (2020) & Rabbani et al. (2020).** It was consisted of 15 questions covered the following items concept of coronavirus, reliable source of information, symptoms, mode of transmission, incubation period, complications, high-risk population, diagnosis, treatment, the difference between isolation and quarantine, preventive measures, and types and places of vaccines.

Scoring system: Maternity staff nurses' knowledge regarding coronavirus was calculated as follows:

Incorrect / no answer scored as one degree. Incomplete correct answer scored as two degree. Complete correct answer scored as three degree

The total score was summed and converted into two categories satisfactory knowledge more than 85% of the total score, while unsatisfactory knowledge if total score was less than 85%.

Tool II: Maternity staff nurses' Compliance for protective measures against coronavirus it was adapted from **(Lam, 2014 and WHO, 2020).**

It was modified by the researcher and used to evaluate compliance of the nurses with protective measures against coronavirus. It contained (16) items and was rated by a four-point scale; each item scored as; (Always, as recommended" should be considered as wearing the Personal Protective Equipment (PPE) when indicated more than 95% of the time. "Most of the time" should be considered as 50% of the time or more. "Occasionally" should be considered as 20% to less than 50% of the time. "Rarely" should be considered as less than 20%).

❖ **Scoring system:**

Nurses' compliance with protective measures against coronavirus was calculated as follow; always=4, most of the time=3, occasionally=2, rarely=1.

The total scores ranged from 1 to 64, and the total score was converted into two categories; compliance if response was more than 95% from the total score, and non-compliance if the total score was less than 95%.

Validity and reliability:

It was established by a panel of three specialized university professors in the branch of maternity and gynecological health nursing to measure the face and content validity of tools and according to their opinions and comments, the modification was done. Reliability of tools was done through using the Cronbach alpha test (r= 0.847 for the questionnaire tool and r= 0.814 for maternity staff nurses' compliance with protective measures).

3- Operational design;

The operational design included the preparatory phase, pilot study, and fieldwork.

Preparatory phase:

It includes reviewing related literature, and theoretical knowledge of various aspects of the study using books, articles, internet periodicals, and magazines, to develop tools for data collection.

Pilot Study:

A pilot study was done on (8) maternity nurses representing 10% of the total sample to evaluate the applicability, clarity, feasibility and efficiency of the tools, in addition to determine the time required to fill the data collection tool, and find the possible obstacles or problems that might face researcher and interfere data collection. There were no necessary modifications made according to the result of the pilot study.

Field work:

Data collection started from July 2021 till the end of December 2021. The researcher determined 3 days per week: to collect data from maternity nurses.

Study setting	Number of nurses	Time for data collection
Fayoum General Hospital	23	5 weeks
Itsa Central Hospital	20	5 weeks
Fayoum University Hospital	15	4weeks
El sheikh Hassan MCH	6	2 weeks
El hadka MCH	6	2 weeks
El sad el aaly MCH	6	2 weeks

The researcher attended the previously mentioned setting from 10 am to 2 pm. The researcher started by introducing herself to maternity nurses, giving a clear and brief idea about the aim of the study. The purpose of the study was simply explained to nurses under study and oral approval was obtained. The researcher met each nurse separately for explaining the tools of data collection, filling the questionnaire which took about 30 minutes, and determining the time for follow-up. Researcher observed each staff nurse separately while performing nursing activities in the previously mentioned setting to evaluate nurses' compliance with protective measures against coronavirus (tool 2). Some nurses observed more than one time.

4- Statistical design

Statistical presentation and analysis of the present study were conducted, using the mean, standard deviation, chi-square test were used to compare between groups in qualitative, linear correlation coefficient for detection of correlation between two quantitative variables in one group. By Statistical package for social sciences (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.).

Significant level:
> 0.05 Non significant. < 0.05* significant.
< 0.001* High significant.

Results:

Table (1): illustrates that the mean age of the study group was 35.38±9.77 years, and 30.3% of the studied nurses worked in Fayoum General Hospital. As regards years of experience, the mean experience was 15.39±10.7 years. Furthermore, 85.5% of the studied nurses' had diploma degrees.

Figure (1): illustrates that 73.7% had a satisfactory level of knowledge about coronavirus, and 26.3% had an unsatisfactory level of knowledge.

Figure (2): shows that 81.6% of the studied nurses had knowledge about coronavirus from mass media followed by 56.6% from social media/internet and 39.5% from seniors and other colleagues.

Figure (3): shows that among the study group, 35.5% had compliance with protective measures against coronavirus and 64.5% non-compliance

Table (2): presents that, there was a high statistically significant relation between the total knowledge of maternity staff nurses with their age and years of experience when p-value <0.001**. Moreover, there was a statistically significant relation between total knowledge and place of work when p-value <0.05*.

Table (3): presents that, there was a high statistically significant relation between total compliance with age, educational level, and years of experience when p-value <0.001**.

Table (1): Frequency distribution of maternity staff nurses' personal data (N=76).

Items	N	%
Age (years)		
<30	26	34.2
30- <40	29	38.2
40 - <50	12	15.8
50 or more	9	11.8
Mean±SD		35.38±9.77
Place of work		
Fayoum university hospital	15	19.7
Fayoum General Hospital	23	30.3
Itsa Central Hospital	20	26.3
El sheikh Hassan MCH	6	7.9
El hadka MCH	6	7.9
El sad el aaly MCH	6	7.9
years of experience (years)		
<10	27	35.5
10 - <20	26	34.2
20 - <30	13	17.1
30 or more	10	13.2
Mean±SD		15.39±10.7
Educational level		
Diploma	65	85.5
Bachelor	9	11.8
Postgraduate	2	2.6

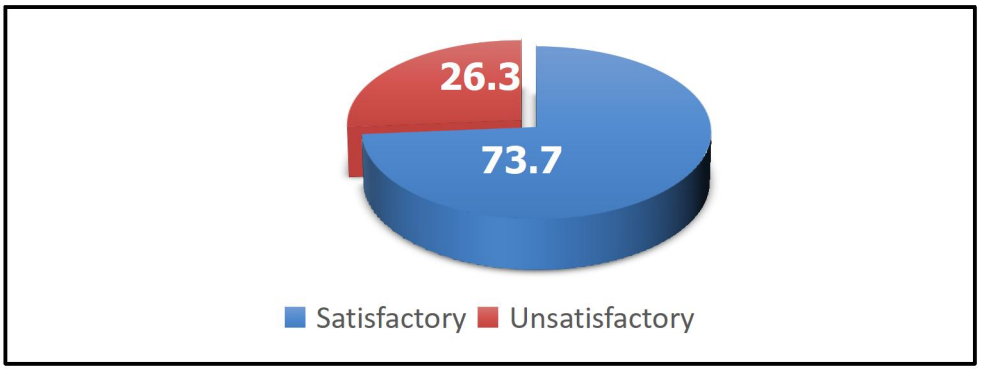

Figure (1): Percentage Distribution of maternity staff nurses' total level of knowledge about coronavirus.

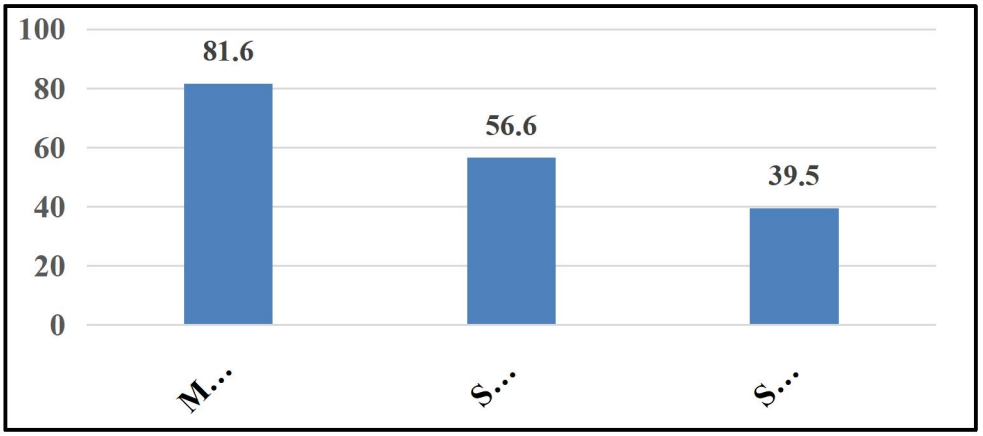

Figure (2): Percentage Distribution of the studied maternity staff nurses according to the sources of information about coronavirus

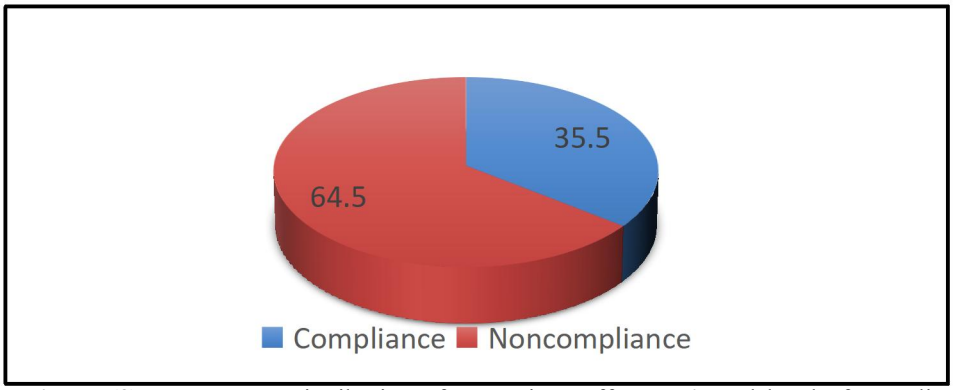

Figure (3): Percentage Distribution of maternity staff nurses' total level of compliance for protective measures against coronavirus.

Table (2): Relation between personal data of maternity staff nurses and total knowledge score

Items	Level of knowledge				Total	Chi-square	
	Satisfactory		Unsatisfactory				
	N	%	N	%		X^2	P-value
Age (years)							
<30	11	42.3	15	57.7	26	20.905	<0.001**
30- <40	25	86.2	4	13.8	29		
40 - <50	12	100.0	0	0.0	12		
50 or more	8	88.9	1	11.1	9		
Place of work							
Fayoum university hospital	5	33.3	10	66.7	15	18.602	0.002*
Fayoum General Hospital	18	78.3	5	21.7	23		
Itsa Central Hospital	17	85.0	3	15.0	20		
El sheikh Hassan MCH	6	100.0	0	0.0	6		
El hadka MCH	6	100.0	0	0.0	6		
El sad el aaly MCH	4	66.7	2	33.3	6		
Years of experience (years)							
<10	12	44.4	15	55.6	27	19.523	<0.001**
10 - <20	22	84.6	4	15.4	26		
20 - <30	13	100.0	0	0.0	13		
30 or more	9	90.0	1	10.0	10		
Educational level							
Diploma of Nursing	46	70.8	19	29.2	65	2.072	0.355
Bachelor of Nursing	8	88.9	1	11.1	9		
Postgraduate Studies	2	100.0	0	0.0	2		

Table (3): Relation between personal data of maternity staff nurses and total compliance score

Items	Level of compliance				Total	Chi-square	
	Compliance		Noncompliance				
	N	%	N	%		X^2	P-value
Age (years)							
<30	3	11.5	23	88.5	26	25.824	<0.001**
30- <40	13	44.8	16	55.2	29		
40 - <50	2	16.7	10	83.3	12		
50 or more	9	100.0	0	0.0	9		
Place of work							
Fayoum university hospital	3	20.0	12	80.0	15	5.077	0.407
Fayoum General Hospital	9	39.1	14	60.9	23		
Itsa Central Hospital	6	30.0	14	70.0	20		
El sheikh Hassan MCH	2	33.3	4	66.7	6		
El hadka MCH	3	50.0	3	50.0	6		
El sad el aaly MCH	4	66.7	2	33.3	6		
Years of experience (years)							
<10	3	11.1	24	88.9	27	28.759	<0.001**
10 - <20	12	46.2	14	53.8	26		
20 - <30	2	15.4	11	84.6	13		
30 or more	10	100.0	0	0.0	10		
Educational level							
Diploma of Nursing	16	24.6	49	75.4	65	23.341	<0.001**
Bachelor of Nursing	9	100.0	0	0	9		
Postgraduate Studies	2	100.0	0	0	2		

Discussion:

Coronavirus disease 2019 (COVID-19) is the most well-known disease in the globe in 2020. This virus has infected more than 190 million people. Approximately 1 million people are currently infected, with 99.4 percent in a mild condition and 0.6 percent in a serious or critical condition. So, the coronavirus disease 2019 (COVID-19) has quickly become a global threat to human health **(Hasibuzzaman., 2021).**

This pandemic is intensely stressful for healthcare workers (HCWs) in general, and nurses in particular, as they play a critical role at the forefront of the fight against COVID-19 worldwide. Nurses working in healthcare facilities are the most at risk as they are in close and prolonged contact with confirmed patients of COVID-19, or who are symptomatic or highly vulnerable to infection. Furthermore, they are responsible for their essential treatment and care **(Finch, 2020).** Moreover, globally, nurses are a dynamic part of the healthcare system, and since the outbreak of COVID-19, they have had challenging experiences and problems. **(García-Martín et al., 2020).** Based on this important issue the present study was conducted to assess maternity staff nurses' knowledge and compliance for protective measures against coronavirus.

The current study results revealed that the mean age of the studied sample was 35.38±9.77 years, their ages ranged between<30 to >50, the mean years of experience was 15.39±10.7 years and the majority of the studied nurses had a diploma education level.

Regarding the total score of knowledge of the studied nurses, the current study result showed that nearly three-quarters of maternity nurses had satisfactory knowledge of COVID-19 infection. The current result was in the agreement with **Kassie et al. (2020)** who conducted a cross-sectional study on 408 healthcare providers who worked in health centers and hospitals to assess knowledge and attitude towards COVID-19 and associated factors among health care providers in Northwest Ethiopia, and found that nearly three-quarters of health care providers had good knowledge about COVID-19 infection. In the same line, the finding of the current study was supported by **Huynh et al. (2020)** who conducted a cross-sectional study in China, a systematic random sampling strategy was carried out on 327 participants to assess knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City, and found that the majority of healthcare workers had good knowledge. This agreement could be due to this serious disease of the epidemic are the overwhelming news reports on the public health emergency, which encouraged the nurses to actively learn knowledge about this disease from various channels of information to protect themselves and women during the maternity cycle.

On the other hand, the finding of the current study regarding the total score of knowledge disagreed with **Elhadi et al., (2020)** who conducted a cross-sectional study on 1572 physicians and nurses who worked in 21 hospitals in Libya to assess the levels of knowledge and preparedness regarding COVID-19 among physicians and nurses and reported that nearly three-quarters of the participants had poor level of knowledge on COVID-19. Moreover, the current study result was incongruent with **Bhagavathula et al., (2020)** who carried out a cross-sectional study on 453 HCWs to investigate the knowledge and perceptions of HCWs about COVID-19 and reported that nearly two-thirds of healthcare workers had poor knowledge. The difference could be due to the time of the study where the previous studies were conducted during the early pandemic

Concerning sources of information about the coronavirus, the current study result revealed that more than three-quarters of the studied sample had information about coronavirus from mass media, more than half used social media and the internet, and only more than one-third from seniors and other colleagues.

This study result was supported by **Buertey et al. (2020)** who carried out a quantitative descriptive study on 196 nurses/midwives who worked in Tamale Central Hospital and the Tamale Teaching Hospital in Ghana to explore the nurses' knowledge, attitude, and practices regarding the prevention of coronavirus (COVID-19) in the Tamale Metropolis and found that more than three-quarters of nurses used mass media

(television and Radio) as their primary source of information on COVID-19 followed by social media and the minority relied on information from colleagues.

Also, in the same line, **Jemal et al. (2021)** conducted a cross-sectional study, a simple random sampling technique to select 422 HCWs in Ethiopia to assess the level of knowledge, attitude, and practice of healthcare workers toward COVID-19 and its prevention, and found that around three-quarters of health care workers used mass media (television/radio) and social media to gather information regarding COVID-19 and only more than one-quarter of sample gather their information from their peers (colleagues). This agreement could be explained by; the global interest from media and ministries of health in educating HCWs through TV and radio, posters and pamphlets, newspapers, and magazines.

Concerning the total score of compliance with protective measures, the present study results demonstrated that nearly two-thirds of the studied maternity nurses hadn't compliance with protective measures against coronavirus.

The current study result was in the same line with **Kassie et al. (2020)** who carried out a cross-sectional study, a multistage sampling technique was used to select 634 HCWs from hospitals and health centers, to assess HCWs' compliance with the recommendations of COVID-19 preventive practice in Northwest Ethiopia, and found that nearly two-thirds of the studied sample hadn't compliance with the recommendations of COVID-19 preventive practice. Also, the current result agreed with **Etafa et al. (2021)** who conducted a hospital-based cross-sectional study, a simple random sampling technique was adopted to draw the study participants (404) to assess health care workers' compliance and its potential determinants to prevent COVID-19 in public hospitals in Western Ethiopia and found that more than three-quarters hadn't compliance with COVID-19 protective measures. This agreement could be due to, the high workload, inadequate supply of PPE (personal protective equipment), insufficient institutional support; also lack of training about the importance and how to use the PPEs to overcome and restrict the spread of COVID-19 infection.

In contrast, the current finding was contradicting with **Amanya et al. (2021)** who conducted a descriptive cross-sectional online study, a convenience sampling technique was used to select 213 HCWs to determine the knowledge and compliance with Covid-19 infection prevention and control measures among healthcare workers in regional referral hospitals in northern Uganda and found that more than two-thirds of health workers had good compliance with Covid-19 IPC measures. Moreover, **Tadesse, Gebrewahd& Demoz., (2020)** carried out a hospital-based cross-sectional study on 415 nurses to determine the knowledge, attitude, practice, and psychological response among nurses toward the COVID-19 outbreak in northern Ethiopia and found that more than two-thirds of the studied sample had good infection prevention practice.

Furthermore, the present study finding disagreed with **Mbachu et al. (2020)** who conducted a web-based, cross-sectional study on 403 HCWs to determine the level of knowledge, attitude, practices, and impact of COVID-19 infection on healthcare workers (HCWs) working in a South-Eastern Nigerian state and found that the majority of participants had good preventive practices of COVID-19. This discrepancy could be due to the difference in the economic status of the countries, which increases the capacity and distribution of protective equipment in the healthcare system. Additionally, Uganda, Ethiopia, and Nigeria also offer major training for healthcare professionals, particularly nurses. Moreover, this could be due to the difference in methods of data collection, as self-reported studies are likely to find more compliance with infection prevention and control (IPC).

Regarding the relation between personal data and total knowledge score among the studied nurses, the current study result showed that there was a high statistically significant relation between total knowledge score with age and years of experience. This result agreed with **Parajuli et al. (2020)** who conducted a cross-sectional study, a purposive sampling technique to select 230 HCWs to assess the knowledge and attitude toward COVID-19 among healthcare workers working in Seti Zonal Hospital, Dhangadhi, Nepal, and revealed that a high statistically significant relation between total

knowledge with age and years of experience when p value <0.001. This agreement could be due to the level of knowledge increases as age and years of experience increase.

Indeed, there is no statistically significant relation between total knowledge score and level of education among the studied nurses, this result was in agreement with **Kamineni et al. (2020)** who carried out a cross-sectional study on 177 nursing and allied health care professionals to assess the knowledge of COVID-19 among nursing and Allied health care professionals working in tertiary care hospital in Chennai, India and found that there was no significant relation between total knowledge score and level of education when p value=0.355.

As regards the relation between personal data of maternity nurses and total compliance score, the current study results represent that high statistically significant relation between total compliance with age, educational level, and years of experience. This result was in the same line with **Said et al., (2021)**, who conducted a Quasi-experimental study, a convenient sample of 90 nurses who worked at the Obstetrics and Gynecology Department in Benha University Hospital to assess the effect of the educational program among maternity nurses regarding precautionary and preventive measures at labor unit during COVID and found a highly significant relation between practice and demographics characteristics (education, experience, and age) pre- and post-program when p-value <0.001. This agreement could be due to the level of compliance increased with older nurses who had more experience with a higher level of education that made them more aware of COVID-19 danger and concerned with controlling the pandemic through compliance with protective measures. Also, older nurses being high risk for infection and fear transmitting the disease to their families

Conclusion

Based on the research and research questions the present study results concluded that nearly three-quarters of the maternity staff nurses had satisfactory knowledge of COVID-19 infection, and nearly two-thirds of the studied maternity nurses hadn't compliance with protective measures against coronavirus.

Recommendations

The finding of the present study suggested the following recommendations:

1- Design and implement a motivational program for maternity staff nurses to promote their compliance with protective measures during the covid-19 pandemic.

2- Further research to study barriers to compliance with protective measures among maternity staff nurses during the covid-19 pandemic.

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