

Assessment of Nurse's Knowledge and attitude regarding WHO breastfeeding guideline during COVID-19

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Abstract

Background: Nurses are the first line of defense during the current world wide pandemic. Nurses' knowledge and attitudes can directly influence their practices. Effective nurses' practices lead to achievement of the desired outcomes. The study **aimed** to: assess Nurse's Knowledge and attitude regarding WHO breastfeeding guideline during COVID-19. **Subject & Method:** A descriptive research design was used to accomplish this study. **Sample:** Study sample included one hundred and ten nurses who were working in obstetrics and gynecology departments and neonatal intensive care unit at Mansoura University Hospitals were involved in the study. **Tools:** Data was collected through three tools. **Tool I:** Socio- demographic data about nurses. **Tool II:** Nurse's Knowledge regarding WHO breastfeeding guideline during COVID-19. It included 2 parts: **Part I:** General knowledge about covid 19: **Part II:** knowledge regarding WHO breastfeeding guideline during COVID-19. **Tool III:** Attitude of the nurses towards breast feeding during COVID-19. **Results:** A total of 71 (64.5%) of nurses showed poor level of knowledge regarding World Health Organization breastfeeding guideline during COVID-19, while 12 (10.9%) of nurses had good level of knowledge. Moreover, 65.5% of nurses had a positive attitude toward breast feeding during COVID-19. **Conclusion:** The study provided a better understanding of prevalent knowledge of nurses regarding the recommended breastfeeding practices among suspected or confirmed cases with COVID-19. The results highlighted that there were poor knowledge score regarding WHO breastfeeding guideline during COVID-19 and a positive attitude toward breast feeding during covid. The study **recommended;** Promotion of optimal breastfeeding practices during the COVID-19 pandemic and creating awareness among nurses and HCWs about WHO breastfeeding guideline during COVID-19. **Further researches;** are needed to provide educational program to nurses about World Health Organization breastfeeding guidelines during COVID-19.

Key words: Attitude ,Breastfeeding, COVID-19, Knowledge, Nurse's, WHO guideline.

Introduction

Corona virus is a single-stranded RNA virus of the beta-coronavirus genus. Virus transmission among people is predominantly by respiratory droplets and direct contact with no conclusive evidence of vertical transmission. In recent researches, there has no evidence about transmission of the SARS-CoV-2 through breast milk. COVID-19 pandemic has been one of the most disruptions in the routine provision of perinatal health and healthcare workers (HCWs) remains hesitated regarding advice to be given to lactating mothers who are suspected or confirmed with COVID-19⁽¹⁾.

Exclusive breastfeeding is defined as breast feeding during the first 6 months of infant life without introducing other substances, is recommended by the WHO. Academy of Breastfeeding Medicine and Royal College of Obstetricians and Gynecologists recommended that exclusive breastfeeding with following the standard respiratory and hand hygiene protocols in suspected/confirmed COVID-19 mothers. During this crucial period, there have been discrepancies in the initially available literature about the recommendation of short-term separation of COVID-19 positive

mothers from their infant following childbirth, direct breastfeeding, and use of expressed breast milk⁽³⁾.

Breastfeeding maintains the health and wellbeing of the mother and newborn, with a dynamic, bidirectional exchange between the mother and her infant, which considers the corner stone of infant and child health. Many international organizations as WHO, United Nations International Children's Emergency Fund (UNICEF) and the Union of European Neonatal & Perinatal Societies (UENPS), all highlight the well-established short- and long-term immunological and psychosomatic benefits of breastfeeding for the both mothers and infants⁽⁴⁾. Also, the current recommendations concluded that unclear evidence regarding the transmission of COVID-19 from mothers to their infants through breastfeeding. As a result, strict measures of mother-infant separation and discontinuation of breastfeeding should be avoided, regardless of a positive diagnosis and the intensity of symptoms. When the mother unable to provide care of their infants, in this condition, expressed, fresh, unpasteurized breast milk could be provided to the baby⁽⁵⁾.

According to WHO recommendations, the mother should be encouraged to breastfeed her infant, while considering the standard precautionary measures. It is very important for the health care team to provide all the support and guidance necessary for the breastfeeding mothers during this particularly difficult time. The presence of a healthy companion is allowed, but must not of visitors; this tends to be a cause of sorrow for WHO recommends the use of expressed breast milk during the temporary separation of the neonate, which has to be provided by a healthy caregivers to the infant. Expressing milk should be done through using a dedicated breast pump and with complete hygienic precautions. Those recommendations are aimed to provide at least the partial benefits of breast milk rather than no breast feeding ⁽⁶⁾.

Nurses can play a vital role in dispelling the doubts and misconceptions among pregnant and lactating mothers regarding breast feeding. Moreover assisting mothers to receive necessary support which enable them to maintain optimal breastfeeding and managing common breastfeeding difficulties including necessary precautions for infection prevention and control (IPC) measures ⁽⁷⁾.

Significance of the study

Professional advice provided to lactating mothers in healthcare facilities impacts all aspects of infant feeding. However, studies conducted to assess the knowledge, attitude, and practice of breastfeeding among healthcare providers was inadequate during the current worldwide pandemic. The main reasons for such an existing gap in knowledge and skills are in-adequate coverage of breastfeeding and weaning in medical curricula as well as defective in-service updates. Alteration and changes that has been made in the health care system and policy, mobility of nursing staff to different departments, decrease number of staff per shift, all these factors along with the precautionary measures affect counseling and education provided to mothers during Covid-19 pandemic. Furthermore, mothers have numerous myths and misconceptions about breastfeeding to infants with COVID-19 positive mothers. Also, mothers should follow the standard precautions during breastfeeding to minimize the risk of COVID-19 infection ⁽⁸⁾. Assessment of HCPs knowledge, attitude regarding WHO breast feeding recommendations during COVID-19 is very important because this affect their practices, so the current study was established.

Aim of the study

This study aimed to assess Nurse's Knowledge and attitude regarding WHO breastfeeding guideline during COVID-19.

Research question

What are the Nurse's Knowledge and attitude regarding WHO breastfeeding guideline during COVID-19?

Subjects and Methods

Research design

A descriptive research design was used to accomplish this study.

Setting

The study was carried out at Obstetrics and gynecology wards and neonatal intensive care unit at Mansoura University Hospitals. Mansoura University Hospitals affiliated to the Ministry of Higher Education and provide care to the surrounding village. The Hospitals included four internal departments of obstetrics and gynecology and a separate ward for emergency and delivery cases next to neonatal intensive care unit. The internal departments located in the third floor and include department (9, 10, 15, and 18). Every department contains from 26 to 30 beds and receives high risk pregnancy and postnatal cases after cesarean deliveries. Emergency and delivery ward located in the ground and receive cases in the hot days (Sunday,

Tuesday, and Thursday). Cases admitted to the Emergency and delivery unit for normal delivery or emergency obstetric care. Neonatal intensive care unit located in the ground next to emergency and delivery unit. This unit includes 10 incubators and receives emergency newborn cases from delivery unit. Care provided by 19 nurses and 5 physicians.

Study subjects

A convenient sample of One hundred and ten nurses who were providing care in obstetrics and gynecology departments, nurses in the emergency and delivery ward as well as nurses in neonatal intensive care unit at Mansoura University Hospitals

Sample Size Calculation

Based on data from literature (**Rajan et al., 2020**)⁽⁹⁾, to determine the sample size with precision/absolute error of 5% and type 1 error of 5%:

$$\text{Sample size} = [(Z_{1-\alpha/2})^2 \cdot P(1-P)]/d^2$$

Where,

$Z_{1-\alpha/2}$ = is the standard normal variate, at 5% type 1 error ($p < 0.05$) it is 1.96.

P = the expected proportion in population depended on previous studies.

d = absolute error or precision.

So, Sample size = $[(1.96)^2 \cdot (0.741) \cdot (1 - 0.741)] / (0.082)^2 = 109.6$. Based on the previous

formula, the sample size required for the current study is 110.

Tools of Data Collection

Data collection included the following three tools:

Tool I: Structured Interview

Questionnaire: This tool was developed by the researcher based on relevant literature to assess the basic data of the study subjects and included:

Part I: Socio- demographic data of nurses:

This part included the socio-demographic characteristics of nurses: such as (age, educational level, residence, and marital status.

Part II: Professional characteristics of nurses:

This part included (working department, years of experiences and previous training about breast feeding during covid -19).

Tool II: Nurse's Knowledge regarding WHO breastfeeding guideline during COVID-19.

It included 2 parts as follows:

Part I: General knowledge about covid 19:

It developed by the researcher after revising the other related literatures (**Mohamed, 2021**)⁽¹⁰⁾ and contained 9 items related to covid-19 such as (causative agent, source of infection, symptoms, mode of transmission, high risk

groups, factors increase the risk of infection, does the infection has a cure, treatment, and the protective measures against COVID-19.

Scoring System

Knowledge regarding COVID-19 questionnaire is a 9-item questionnaire. The responses of the nurses were recorded as incorrect (score 0) or correct (score 1). The total scores of the 9 items were summed up into a total score, ranging from 0 to 9. The total knowledge score in categorized into 3 knowledge levels: poor knowledge (<50% of the total score), fair knowledge (50-65% of the total score) and good knowledge (>65% of the total score).

Part II: knowledge regarding WHO breastfeeding guideline during COVID-19:

It developed by (**World Health Organization, 2020**)⁽⁶⁾ which consisted of 13 recommendations that should be followed by the health care providers if the mother was positive/suspected COVID-19. And also, contains 2 recommendations if the mother was negative.

Scoring System

WHO guideline about breast feeding during COVID-19 is a 15-item questionnaire, with the nurses' response for each question is either: No (score 0), not sure (score 1) and yes (score 2). The total knowledge score ranged

from 0 to 30. The total score is categorized into 3 knowledge levels: poor knowledge (<50% of the total score), fair knowledge (50-65% of the total score) and good knowledge (>65% of the total score).

Tool III: Nurses' Attitude towards breast feeding during COVID-19.

It developed by the researcher after revising the related literatures (Dimopoulou et al., 2020)⁽¹¹⁾ and contained 9 items such as (COVID-19 can easily be prevented during breast feeding, COVID-19 will finally be successfully controlled during breast feeding, there is no evidence that COVID-19 transmitted to fetus from mother during breast feeding, ect...). A three-point Likert scale (Disagree, Uncertain, Agree) was used to assess the adequacy of attitude among the respondents.

Scoring System

This questionnaire is formed of 9 items. The response of the nurses for each item was either disagree (score 1), uncertain (score 2) and agree (score 3). The scores of the individual items were summed up into a total score that ranged from 9 to 27. The total attitude score is categorized as either negative (<60% of the total score) or positive (\geq 60% of total score).

Validity and reliability

Content validity of the study tools ascertained by jury of 5 professors in the field of pediatric and maternity nursing and the looked-for modifications were carried out. Some questions were omitted, and others rephrased in general knowledge part and in the attitude scale. Reliability was done by Cronbach's alpha coefficient test; the results were (0.872 & 0.894) for knowledge and attitude tools respectively.

Pilot Study

It was conducted on 10% of nurses (11 nurses). The aim of the pilot study was to evaluate clarity, visibility, applicability, as well as the time required to fulfill the developed tools. Subjects who shared in the pilot study were excluded from the main study subjects.

Ethical considerations

The researcher explained the aim of the research to nursing managers to get better cooperation during the data collection of the research. Also, an informed consent was obtained from each participant. Informed consent was obtained including their rights to refuse participation or withdraw at any time, without giving any reason. The participants were assured that all obtained information will be treated confidentially; and will only be

used for the purpose of research. They were also informed that the research maneuvers not entail any harmful effects to them.

Fieldwork

The study consumed 3 months began from March 2021 till May 2021, through 2 phases as following:

Preparatory phase

- The researchers review the relevant literature related to prepare the tools for the study.
- An official written approval letter clarifying the title, purpose and setting of the study was obtained from the director of the obstetrics and gynecology wards and neonatal intensive care unit at Mansoura University Hospitals
- The researchers interviewed each nurse individually and explained the aim of the study also obtain the informed consent before data collection process.

Implementation phase

- The researchers went to the predetermined settings three days per week (Sunday, Tuesday, and Thursday).
- Data collection process started first with the emergency and delivery ward. In this wards every parturient woman stay from 6-8 hours after normal delivery to be under close observation by health care providers.

- After the nurses complete their role either labor and delivery care or post-partum care, the researchers started to collect the data.
- Data was obtained individually from each nurse in whom the researchers collect the socio demographic data from the nurses.
- Then, nurses' general knowledge about COVID-19 and knowledge about WHO breast feeding guideline was obtained.
- Furthermore, nurses' attitude regarding breastfeeding during COVID-19 was assessed.
- After completion the data collection from the emergency and delivery ward, the researchers continued the data collection from obstetrics and gynecology wards (9, 10, 15, and 18). In these wards the nurses provide the preoperative care to cesarean delivery cases in which the cases were admitted 48 hours before the operation. Also, post-operative care was provided as the woman stay from 24 to 48 hours after delivery for normal conditions. If there is any complication, the period of hospital stay was increased.
- After completion the data collection from obstetrics and gynecology wards , the researchers continued the data collection from neonatal intensive care unit.

- During the resting time of the nurses, the researchers interviewed every nurse and collect the necessary data as the same previous manner.
- The study researchers spent about 20 to 35 minutes with every nurse to obtain the necessary information.
- The researchers followed the recommended protective measures of COVID-19 during data collection process.
- The researchers went to the previous mentioned settings until the data collection process was completed.

Statistical data analysis

Statistical analysis was conducted using SPSS for windows version 20.0 (SPSS, Chicago, IL). All variables with continuous data showed normal distribution and were expressed in mean \pm standard deviation (SD). Categorical data were presented in number and percentage. Data comparisons were expressed using chi-square test for variables with categorical data. The reliability (internal consistency) of the nurse's knowledge regarding COVID-19, nurses regarding WHO breastfeeding guideline during COVID-19 and Nurses' attitude regarding breast feeding during COVID 19 questionnaires was calculated. Statistical significance was maintained at $p < 0.05$.

Results

Table (1) presents socio-demographic characteristics of nurses; it revealed that the age of more than one third of nurses (38.2%) were less than 25 years with mean age 27.3 ± 4.1 . Regarding their education, 40.0% of nurses graduated from Secondary Nursing School. Concerning to their level of experience, it was observed that 35.5% had from 6 to 10 years of experience. Unfortunately, 93.6% of nurses didn't attend any training program related to breast feeding.

Table (2) presents that majority of studied nurses 95 (86.3%) know the sources of infection; about more than three quarter of them know risk groups, treatment, risk factors, mode of transmission of COVID-19.

Figure (1): Shows total general knowledge of nurse's regarding COVID-19; they illustrated that a total of 73 (66.4%) of nurses showed good level of knowledge regarding COVID-19 while 17 (15.4%) of nurses had poor level of knowledge.

Table (3) & figure (2): Reveals total knowledge of nurses regarding World Health Organization breastfeeding guideline during COVID-19; they revealed that A total of 71 (64.5%) of nurses showed poor level of knowledge regarding World

Health Organization breastfeeding guidelines during COVID-19 while 12 (10.9%) of nurses had good level of knowledge

Table 4 & figure 3 demonstrate that total nurse's attitude regarding breast feeding during COVID 19; it revealed that near two third of nurses (65, 5%) showed a positive attitude regarding COVID 19 while only 34, 5% had a negative attitude.

Table (5) :represents association between Total Knowledge score regarding World Health Organization breastfeeding guideline during COVID-19 and attitude regarding breastfeeding during COVID 19;it reveals that, 83.3% of nurses with a good knowledge regarding WHO breastfeeding guidelines during COVID-19, had appositive attitude with statistically significant difference ($p<0.001$).

Table (6): reveals association between the socio-demographic characteristics of nurses and knowledge regarding World Health Organization breastfeeding guidelines during COVID-19; it shows, that (66.7%) of nurses who had Bachelor Degree had a good level of knowledge regarding World Health Organization breastfeeding guidelines during COVID-19. On the other hand, it was observed that (58%) of nurses who had more than 16 years of experience had a good level of knowledge regarding World Health Organization breastfeeding guidelines during COVID-19, with statistically significant difference ($p=<0.001$).

Table (I): Socio- demographic characteristics of the studied nurses. (N= 110)		
	N	%
Age (years)		
<25	42	38.2
25 – 30	36	32.7
31 – 35	23	20.9
>35	9	8.2
Mean \pm SD	27.3 \pm4.1	
Marital status		
Married	73	66.4
Unmarried	37	33.6
Educational qualification		
Secondary Nursing School	44	40.0
Technical Institution of Nursing	39	35.5
Bachelor Degree	27	24.5
Residence		
Urban	86	78.2
Rural	24	21.8
Years of Experience		
<6	34	30.9
6 – 10	39	35.5
11 – 16	27	24.5
>16	10	9.1
Mean \pm SD	7.2 \pm3.1	
Working department		
Labor & Delivery ward	19	17.3
Department (9)	17	15.4
Department (10)	18	16.3
Department (15)	19	17.3
Department (18)	23	20.9
Neonatal intensive care unit	14	12.7
Attending any Training Program Related to Breast feeding		
No	103	93.6
Yes	7	6.4

Table 2. Nurse’s general knowledge regarding COVID-19. (N= 110)

Variables	Correct answer	
	N	%
• Agents of COVID19	90	81.9
• Sources of infection	95	86.3
• Symptoms of COVID-19	93	84.5
• Does COVID-19 have a cure?	79	71.8
• Treatment of COVID-19		
Antibiotics	74	67.3
Drink hot water	81	73.6
Drink salt water	74	67.2
• Mode of transmission		
flying spit from patient while coughing or sneezing	86	78.1
Touching contaminated surfaces and tools and then touching the mouth, nose, or eye	87	79
• Factors increase risk for COVID 19 infection		
Sharing food and drink utensils	81	73.6
Eat foods without cooking, especially meat and eggs	81	73.6
Crowded places like the train and transportation	93	84.5
• Risk group for COVID 19		
Chronic illness	82	74.5
Immuno compromised	89	80.9
Pregnant mothers	85	77.2
People aged 65 years and older	76	69
• Protective measures against COVID19		
Regular hand washing with an alcohol-based hand rub or soap and water	83	75.5
Maintain at least 1 meter distance between yourself and others	88	80
Avoid going to crowded places	88	80
Avoid touching eyes, nose and mouth	78	70.9
Wear a mask to avoid infecting others	87	79
Seek medical attention	91	82

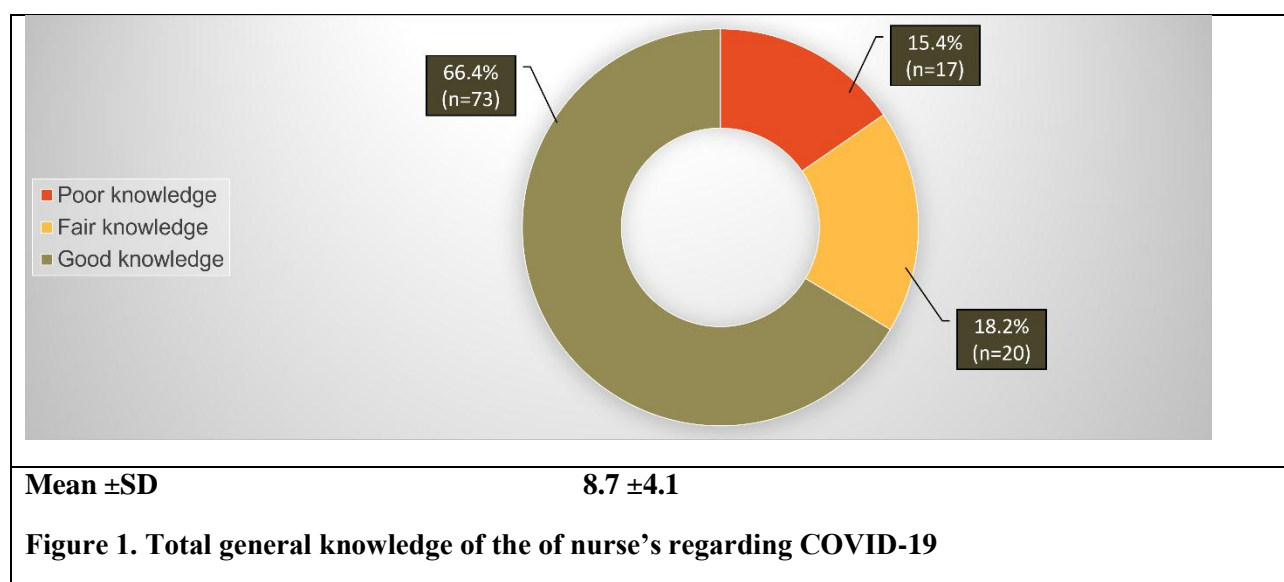
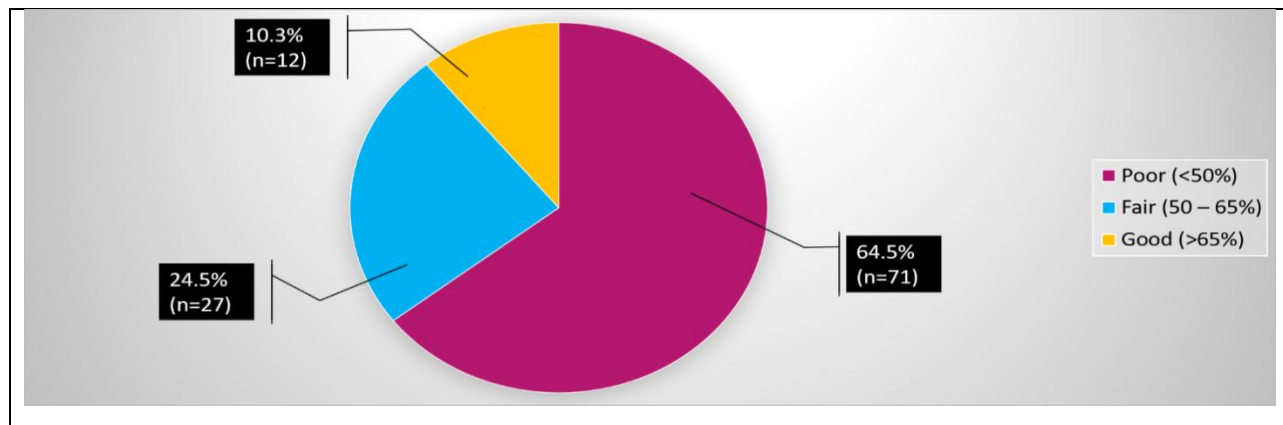


Table 3. Nurses' knowledge regarding WHO breast feeding guideline during COVID-19. (N=110)

WHO Recommendations if positive/suspected COVID-19	No		Not Sure		Yes	
	n	%	N	%	N	%
Recommendations if positive/suspected						
1. The COVID-19 virus has not, to date, been detected in the breastmilk of any mother with confirmed / suspected COVID-19.	65	59.1	33	30.0	12	10.9
2. Skin to skin contact and breastfeeding immediately after birth is recommended	68	61.8	35	31.8	7	6.4
3. The continuation of breastfeeding is recommended if the mother tests positive for COVID-19	69	62.7	33	30.0	8	7.3
4. Hygiene practices when positive for COVID-19 and breastfeeding	74	67.3	30	27.3	6	5.5
5. Hand washing should be done before touching an infant	9	8.2	20	18.2	81	73.6
6. In the event that you cough or sneeze, do so into a tissue and immediately wash hands with soap and water or an alcohol-based hand rub	79	71.8	21	19.1	10	9.1
7. Surfaces should be regularly cleaned and disinfected	73	66.4	20	18.2	17	15.5
8. A breastfeeding mother with confirmed/suspected COVID-19 without access to a medical mask should still breastfeed, while also maintaining other hygiene precautions	74	67.3	24	21.8	12	10.9
9. If a mother confirmed/suspected to have COVID-19 has just coughed over her exposed breast or chest, then she should gently wash the breast with soap and warm water for at least 20 seconds prior to feeding” however, it is not necessary to wash the breast before every infant feeding.	72	65.5	27	24.5	11	10.0
10. If a mother with suspected or confirmed COVID-19 is unable to breastfeed, expressed breastmilk is the best alternative method of infant feeding and is primarily done with hand expression or with the use of a mechanical pump	72	65.5	23	20.9	15	13.6
11. A mother who was unable to breastfeed due to illness caused by COVID-19 and has recovered may begin breastfeeding as soon as she feels well enough	67	60.9	25	22.7	18	16.4
12. Newborns and infants are considered to be at low risk of COVID-19 infection, and of the cases of COVID-19 in young children, most experienced mild symptoms or were asymptomatic	62	56.4	28	25.5	20	18.2
13. For women with confirmed or suspected COVID-19, infant formula is not safer than breastmilk, and actually has more associated risks	75	68.2	27	24.5	8	7.3
WHO Recommendations if negative COVID-19						
14. In cases where COVID-19 is present in a mother's community, breastfeeding is still recommended, as it is what is healthiest for the infant and there is no evidence that COVID-19 can be transmitted through breast milk	65	59.1	32	29.1	13	11.8
15. Despite a lack of risk of having COVID-19, if a mother is using a breast pump or milk storage containers, the equipment should be cleaned after each use with soap and water or in the dishwasher if possible.	66	60.0	32	29.1	12	10.9



Mean \pm SD 11.9 ± 5.5

Figure 2. Nurses knowledge regarding WHO breastfeeding guideline during COVID-19

Table 4. Nurses’ attitude regarding breast feeding during COVID 19. (N= 110)

Variables	Disagree		Uncertain		Agree	
	N	%	N	%	N	%
1. Breast feeding can be affected during COVID-19 pandemic.	31	28.2	43	39.1	36	32.7
2. COVID-19 virus can be passed through breast milk to the baby	33	30.0	40	36.4	37	33.6
3. Baby might get infected from his /her mother during breast feeding.	33	30.0	40	36.4	37	33.6
4. There is no evidence that COVID-19 transmitted to fetus from mother	34	30.9	41	37.3	35	31.8
5. Women with confirmed or suspected COVID-19 can breastfeed her baby, while following protective measures during breast feeding.	35	31.8	41	37.3	34	30.9
6. Period of breast feeding can be affected during COVID_19.	31	28.2	47	42.7	32	29.1
7. Position of breastfeeding can be modified with COVID-19 confirmed or suspected cases.	52	47.3	33	30.0	25	22.7
8. Temporary separation of the mother and her infant after breast feeding can minimize risk of infection.	29	26.4	49	44.5	32	29.1
9. Expressed milk can be safe to baby of confirmed/ suspected mothers.	28	25.5	49	44.5	33	30.0

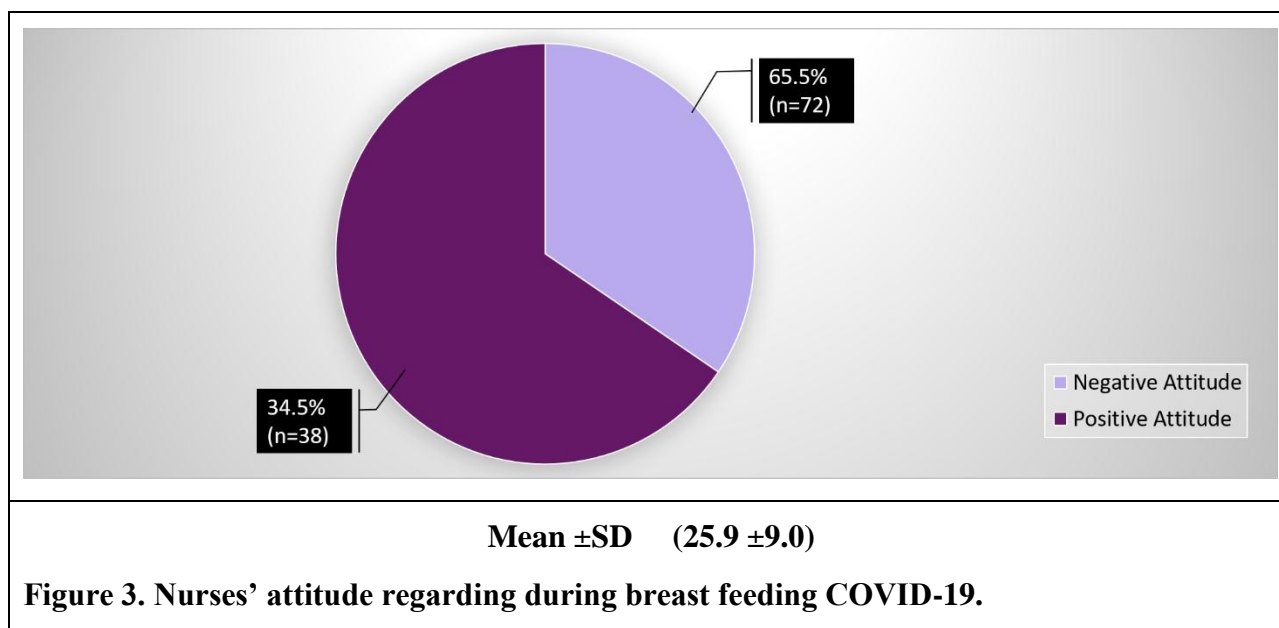


Table 5. Association between Total Nurses’ Knowledge scores regarding WHO breastfeeding guideline during COVID-19 and Nurses’ attitude regarding COVID-19

	Total Knowledge regarding World Health Organization breastfeeding guideline during COVID-19							
	Poor (n=71)		Fair (n=27)		Good (n=12)		Chi-Square	
	N	%	N	%	N	%	X ²	P
Attitude								
Negative	63	88.7	7	35.0	2	16.7	48.304	<0.001
Positive	8	11.3	20	74.1	10	83.3		

Table 6. Association between nurses’ socio-demographic characteristics and nurses’ knowledge regarding WHO breastfeeding guideline during COVID-19.

nurses’ socio-demographic characteristics	Poor(n=71)		Fair(n=27)		Good(n=12)		Chi-Square	
	n	%	n	%	n	%	X ²	P
Age (years)								
<25	30	42.3	10	37.0	3	25.0		
25 – 30	27	38.0	7	25.9	2	16.7		
31 – 35	12	16.9	8	29.6	3	25.0		
>35	3	4.2	2	7.4	4	33.3	15.131	0.019
Marital status								
Married	46	64.8	20	74.1	7	58.3		
Unmarried	25	35.2	7	25.9	5	41.7	1.145	0.564
Educational qualification								
Secondary Nursing School	32	45.1	10	37.0	2	16.7		
Technical Institution of Nursing	26	36.6	11	40.7	2	16.7		
Bachelor Degree	13	18.3	6	22.2	8	66.7	13.442	0.009
Years of Experience								
<6	30	42.3	4	14.8	0	.0		
6 – 10	27	38.0	12	44.4	0	.0		
11 – 16	14	19.7	8	29.6	5	41.7		
>16	0	0.0	3	11.1	7	58.3	54.905	<0.001
Residence								
Urban	48	67.6	26	96.3	12	100.0		
Rural	23	32.4	1	3.7	0	0.0	13.198	<0.001
Attending any Training Program Related to Breast feeding								
No	71	100.0	20	74.1	12	100.0		
Yes	0	0.0	7	25.9	0	0.0	22.981	<0.001

Discussion

In the COVID-19 pandemic scenario, social distancing is the “new normal” for preventing the transmission of SARS-COV-2 virus. This leads to a lot of confusion as to whether to let mother and baby dyad bond in close contact and breastfeed or not if the mother is COVID-19 suspected/confirmed. The recommendations of social distance among the general population aim to decrease the prevalence of COVID-19 because it reduces morbidity and mortality, better lifelong survival, health, and growth of the newborn/infant (12). This study is the first of its kind in Egypt exploring breast feed mothers’ knowledge and attitudes regarding WHO breastfeeding guideline during COVID-19. Therefore, a great want to offer baseline statistics for enforcing tasks to perceive the educational needs and alter recurring practices in the fight against this pandemic.

In the present study about two thirds of nurses showed good level of the general knowledge regarding COVID-19 while (15.4%) of nurses had poor level of knowledge. This comes in accordance with (Mohamed., 2021)⁽¹⁰⁾. He found that more than three quarter and majority of the participants (nurses, and physicians) had good knowledge towards COR-ONA virus. From the researcher point

of view this may be due to continuous provision of information and instruction on mass media, continuous training program and encourage healthcare providers to be aware of COVID-19 updates.

On the other hand this isn't in agreement with a study in the United Arab Emirates which is done by (Bhagavathula AS, Wafa Ali Aldhaleei WA, Rahmani J, 2020)⁽¹³⁾. They clarify that there were in sufficient level of knowledge about the disease transmission, and a significant proportion of the symptom was found among health care workers.

Concerning nurses’ knowledge regarding WHO breastfeeding guideline during COVID-19. The nurses in the present study demonstrated that less than one third of the infants are considered to be at lower risk of COVID-19 infection, and the cases of COVID-19 among young children always presented with mild symptoms or were asymptomatic. This may be explained by the fact that age-related increase in endothelial damage and changes in clotting function, pre-existing coronavirus antibodies and T cells, a higher prevalence of comorbidities associated with severe COVID-19 in adult persons than younger children. These results supported by **the Centers of Disease Control and Prevention (CDC,2021)**⁽¹⁴⁾ which

highlighted that Coronavirus disease is an illness presented with severe acute respiratory syndrome that is more symptomatic and dangerous in adult individuals than younger. In the United States and throughout the world, children were less suffering of COVID-19 than adults. Whereas children of the US population were less than one quarter, minority of all cases of COVID-19 reported to the Centers for Disease Control and Prevention (CDC) were among children and their cases are mild and respond well to the supportive care.

The current results clarified that about three quarter of nurses supported that hand washing should be done before touching an infant. These results congruent with **(Pereira et al., 2020)**⁽¹⁵⁾ They found that breast feeding is safe during COVID-19 with the proper precautions. Also, they recommend that mothers with young children should have the best practice of protection to reduce their risk of infection. These practices include frequent hand hygiene, frequent disinfection of surfaces and objects, and covering their mouth if they cough or sneeze. The explanation for that is the great influence of mass media about the protection of COVID-19 and lately, on the 30th of May, the Egyptian Government has mandated wearing a face

mask in public places and at public transportation.

About one third of nurses supported that when the mother is suspected or confirmed with COVID-19 is unable to breastfeed, expressed breast milk is the best alternative method of infant feeding. Those findings are congruent with **(Breastfeeding Promotion Network of India, 2020)**⁽¹⁶⁾ that has advised; when the mother is unwell and not able to breastfeed directly, she will be able to express her breast milk, which should be given to the infant with a clean cup and/or spoon with the aid of using a healthful caregiver. In a situation when the mother is unable to breastfeed or express breast milk (on ventilator/ICU), as WHO advises, moist nursing, donor human milk, relaxation, or suitable breast milk substitutes ought to be used. This may be due to increasing awareness of nurses regarding the importance of breast milk which is a complete, wholesome, safe, affordable, easily available, immunity providing, and culturally acceptable nutrition

The current study finding showed that about one third of nurses showed poor level of knowledge regarding WHO breastfeeding guideline during COVID-19 while minority of them had good level of knowledge. Those

results not in the same line with the result of **(Rajan et al., 2020)** ⁽⁹⁾, they showed that more than two third of female ward assistant while, more than one third of nursing assistant and more than one half of nursing officer had good knowledge and awareness level regarding optimal breastfeeding practices in suspected/confirmed COVID-19 mothers as per the guidance provided by the WHO. This can be because of loss of educated health care specialists who offer breastfeeding counseling, basic psychosocial support, and practical feeding support. Another reason for that can be because of the stigma related to COVID-19 infection with inside the health care worker whom afraid of getting infected is their worry to transmit the contamination to their households observed via way of means of their belief that the condition is highly transmissible. Also, the reluctance of the general public who are looking for hospital treatment and underreporting of cases, which may also the reason of the fast unfold of the sickness.

The current study observed that near two third of nurses showed positive attitude regarding breast feeding during COVID 19 while one third had a negative attitude.. Those results were in accordance with **(Olum, R.; Chekwech, G.; Wekha, G.; Nassozi, D.R.;**

Bongomin, F 2020) ⁽¹⁷⁾. They stated that more than three quarter of their study participants had a positive attitude towards COVID-19. Which is much higher than the 21% previously reported in among HCWs in Uganda. It is due to positive attitudes from nurse regarding breast feeding during COVID is a very important prerequisite for prevention beliefs, and for promotion of positive practices

Concerning association between total knowledge score regarding World Health Organization breastfeeding guideline during COVID-19 and attitude regarding breastfeeding during COVID 19; the present study revealed that, most of nurses with a good knowledge regarding World Health Organization breastfeeding guidelines during COVID-19 had appositve attitude regarding breastfeeding during COVID 19 , from the researcher point of view this may be due to the fact that knowledge of health care workers (HCWs) is vital for maintaining positive attitude and correct misconception. It also affects their coping strategies to some extent. A Cross-Sectional Study conducted in Egypt by **Abdel Wahed W , Hefzy E, Ahmed M and Hamed N (2020)** ⁽¹⁸⁾, whom have a similar results as good knowledge regarding COVID-19 was significantly

associated with the positive attitude of the studied group.

Regarding relation between the socio-demographic characteristics of nurses and knowledge regarding World Health Organization breastfeeding guideline during COVID-19; the present study revealed that, less than three quarter of nurses who had Bachelor Degree had a good level of knowledge regarding World Health Organization breastfeeding guideline during COVID-19. From the researcher point of view this may be due to the ministry of health continuous updates its website and encourage healthcare providers to be aware of COVID-19 updates. This result was in the same line with **Zhong B-L (2020)** ⁽¹⁹⁾, who found that positive correlation between the level of education and knowledge regarding COVID-19.

Conclusion

This study provides a better understanding of prevalent knowledge of nurses regarding the advice to be given to breastfeeding mothers who are suspected/confirmed with COVID-19 during confinement or after delivery. The results highlighted that their was a poor knowledge score regarding general knowledge and the negative attitudes toward covid.

Recommendations

Depend on the finding of the current study the following is recommended:-

- Training programs to maternity staff about WHO breastfeeding guidance during COVID-19 pandemic is very essential to increase their level of knowledge and maintain optimal breastfeeding practice.
- Well-designed brochures about the recommended breast feeding practices during COVID-19 should be designed and distributed among maternity nurses to increase their level of awareness.
- Continuous training of health care personnel about the standard infection prevention measures during breast feeding among infected and suspected mothers is very crucial.
- Providing nurses with emotional, financial and administrative support is crucial during the current pandemic.

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