

ATTITUDE AND PRACTICES OF BREASTFEEDING DURING COVID-19 PANDEMIC AT FIVE PRIMARY HEALTH CARE CENTERS

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Abstract

Background: The COVID-19 pandemic has significantly impacted on the lives of millions of people around the world. Hundreds of confirmed maternal cases of the Coronavirus disease 2019 have been reported globally. Breast milk is the best source of nutrition for infants, including infants whose mothers have confirmed or suspected coronavirus infection. If an infected mother takes appropriate precautions, she can breastfeed her baby

Aim: This study aimed to investigate the impact of COVID-19 pandemic on attitude and practices of breastfeeding among mothers at primary health care centers in Jeddah City.

Methods: Cross-sectional study was conducted at primary health care centers in Jeddah, Saudi Arabia. Purposive sampling technique was used to enroll 509 breastfeeding mothers. Data were collected using electronic questionnaire, which was designated for this research. The questionnaire was filled up for each participant who were consented to participate in the study. Descriptive and analytical statistics were conducted.

Results: The results from present study showed that the majority of study sample was breastfeeding their current child during COVID-19 pandemic by 85.66%. The results reported that 44.26% of mothers washed their hand frequently before and after breastfeeding. However, 64.67% did not wear mask during breastfeeding. Only 9.17% of participants reported infected by COVID-19 during breastfeeding period. They reported moderate symptoms by 42.5%. More than half of infected mothers were continue breastfeeding their babies. Attitude score was (47.60±5.37), this value equals a percentage of 86.55%, which means that the majority of mothers had a positive attitude toward breastfeeding during COVID-19 pandemic. The results also showed significant factors affecting participants' attitude and practices of breastfeeding.

Conclusion and recommendations: This study shows that mothers have good practices and positive attitude toward breastfeeding during COVID-19 pandemic. However, regarding the implemented of safety measures during breastfeeding they did not apply some precautions. The results provide evidence support the importance of healthcare providers to encourage mothers during COVID-19 pandemic to continue breastfeeding under maintained precaution to protect themselves and their children immunity from risks of disease transmission.

Keyword: Attitude, Breastfeeding, COVID-19, Practices

INTRODUCTION

The World Health Organization (WHO) reported that breastfeeding reduces the risks of newborns from getting diseases. Breastmilk also protects children throughout their infancy and childhood. Thus, mothers with COVID-19 are advised to continue breastfeeding and implement protective measures during feeding the baby [1]. Women with breathing signs such as being shortness of breath are advised to wear medical mask when near to the child especially when feeding. Mothers are also advised to wash hands thoroughly with soap. Another option is the use of sanitizer before and after contact with child. They are advised to clean and disinfect any surfaces before touching them.

There is a limited of researches which showed that there is significant evidence proving vertical transmission or mother to child COVID-19 transmission [2], [3]. Similarly, there were no

significant evidence confirming the COVID-19 transmission on neonates during the breastfeeding process and the probabilities are still seeking for research evidence. This assumption has been noted in several studies which tested the presence of the RNA of COVID-19 in breast milk.

At present, different health institutions such as WHO and UNICEF, encourage to continue breastfeeding during COVID-19 pandemic if maintained all safety measures to control infection transmission [4]. In case of mother health condition disturb breastfeeding or in case of separation mother and baby, health organizations encourage and support to express milk with safety transfer to infant [5]. Saudi Arabia (SA) have 387,794 confirmed cases of COVID-19 with 6,643 deaths [6]. In addition, 749,000 confirmed cases and 9,025 deaths in SA [6]. Global health reports showed that over hundreds of mothers were confirmed COVID-19 cases [7].

There is a lack of knowledge regarding the impact of COVID-19 on the breastfeeding attitude and practices among mothers in SA. The absence of such knowledge could lead to defect of evidence related to this issue or similar, which in turn might lead to deterioration of breastfeeding attitude and practices among mothers, thus this study aims to fill this gap.

STUDY DESIGN & SETTING

A quantitative cross sectional study design was conducted in Jeddah, SA between September to December 2021. The study was carried out at five primary health care centers (PHCC) which represent different directions of the Jeddah city. PHCC considered an essential component of an effective healthcare system in SA [8]. These centers included the Prince Abdul Majeed PHC Center from the southern province; Al Sulimania PHC Center, representing the eastern province; Al Sheraa District Healthcare Center representing the northern province; Al Safa One PHC Center, which represented the western province; and finally, Al Azizia PHC Center, which represented the middle province.

STUDY PARTICIPANTS

The study includes mothers who breastfeed during COVID-19 pandemic and have infants from one month up to two years and attending the Well-baby Clinic or Obstetrics-Gynecology Clinic at the selected PHCC. The sample size was 100 p each center. Total sample collected was 509.

STUDY TOOLS

A structured questionnaire was developed by the researchers. The questionnaire was developed first in Arabic language then translated to English language. Two of expert academics from the Faculty of Nursing at King Abdulaziz University (KAU) who were specialized in Nursing Obstetrics and Gynecology reviewed and verified the questionnaire for content and relevance. The parts of the questionnaire were covered as follows:

Part I: Demographic data: consists of 6 items which were the age, level of income, employment, level of education, marital status, and nationality.

Part II: Obstetric data: consists of 5 items regards the obstetric data such as number of pregnancies, number of deliveries, and number of abortions. This part also included method of deliveries, past medical history.

Part III: Practices toward previous and current breastfeeding: consists of 16 items and it aims to collect information about the participant breastfeeding practices during the previous deliveries and current infant breastfeeding and some questions related to implement the safety measures during this period. The good breastfeeding practice was defined as woman who breastfeeding her child exclusivity or combined with maintaining precaution while women who not breastfeeding at all considered as poor practice. The total practice score was categorized as the following: good ($\geq 60.0\%$), and poor ($< 60.0\%$).

Part IV: Breastfeeding related to positive COVID-19 infection: consists of 11 items and refers to the health history relevant to COVID-19 which included questions describing symptoms to COVID-19 and whether the mother performed breastfeeding during pandemic.

Part V: Attitude of mothers toward breastfeeding during COVID-19 pandemic: it contains of 11 questions to assess participants attitude regard breastfeeding during COVID-19

pandemic. The attitude was measured by 11 items formulated as a positive statement. The scale is measured using the 5-likert scale points. It is ranged between 5=strongly agree and 1=strongly disagree. The attitude statement indicates strongly agree or agree have represented the positive attitude, while the attitude statement natural, disagree and strongly disagree have represented negative attitude. As the scale consists of 11 items the scores ranged from (11- 55). The total attitude score classification was as follows: (11-33) indicated negative attitude while (34-55) indicated positive attitude.

Validity and reliability

Content validity was assessed by two experts' academics from the Faculty of Nursing at KAU who were specialized in Nursing Obstetrics and Gynecology. They revised the tools for clarity, relevance, aim and objectives, arrangement, and the length of the questionnaire. The Cronbach's alpha was calculated within the range of ($\alpha=0.718$), which confirmed for achieving the study objectives.

Ethical approvals

Two ethical approvals were obtained for this study. The first approval was obtained from the Ethical Committee of the deanship of postgraduate studies of the Faculty of Nursing at KAU (Ref No 2M. 80). The second approval was obtained from the Research and Studies Department of the Directorate of Health Affairs at MOH in Jeddah (2125555). Informed consent taken from every mother after explaining the aim and study objectives. They were informed that participation in the study is voluntary and they are free to withdraw at any time without any accountability.

STATISTICAL ANALYSIS

SPSS version 24 was used for statistical analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated to describe categorical and numerical variables. One Way ANOVA and independent sample t-test were used in answering research questions about correlations variables with a consideration of post hoc test. Chi square was conducted to test the relationship between current breastfeeding and some variables. A *p*- value at 0.05 were considered statistically significant.

RESULTS

Demographic information:

Between September and December 2021, 509 women participated in the current study, the majority of the them were in the middle age, 31.43% were aged from 26 to 30 years old, 21.81% aged over 35 years old, while close to 15% age 25 years old or less. 79.17% were Saudi and 61.30% had monthly income of 5000-1000 SAR. 79.57% were housewife and 57.56% got bachelor degree, while 30.26% had secondary school. Most of them were married by 98.23%.

Table 1: Demographic information

Factor	N	%	
Age	< 20 years	13	2.55
	20 – 25 years	70	13.75
	26 – 30 years	160	31.43
	31 – 35 years	155	30.45
	<35 years	111	21.81
Nationality	Saudi	403	79.17

	Non-Saudi	106	20.83
Family income	<5000 SAR	102	20.04
	5000-10,000 SAR	312	61.30
	>10,000 SAR	95	18.66
Employment	Housewife	405	79.57
	Workers	74	14.54
	Student	30	5.89
Education	Primary	13	2.55
	Intermediate	38	7.47
	Secondary	154	30.26
	University	293	57.56
	Other	11	2.16
Marital status	Married	500	98.23
	Divorced	8	1.57
	Widow	1	0.20

2. Obstetric information:

As shown in Table (2) the obstetric information was presented. 34.77% had four times or more pregnancies, followed by one time by 23.97%, the study sample have four times deliveries or more by 29.08%. 72.69% had none number of abortions, while 18.27% had it once a time. The male babies were 54.6%, while female babies were 45.4% and majority of babies were healthy by 98.4%.

Most of study sample did not have medical history by 89%, while 11% had medical history such as anemia, hypothyroidism, hypertension and diabetes mellitus. 58.55% of the study sample delivered normally, while 27.11% were CS, 14.34% had both normal delivery and CS.

Table 2: Obstetric information

Factor	N	%	
Number of pregnancies	One	122	23.97
	Two	117	22.99
	Three times	93	18.27
	Four times or more	177	34.77
Number of deliveries	One	146	28.68
	Two	123	24.17
	Three times	92	18.07
	Four times or more	148	29.08
Number of abortions	None	370	72.69
	One	93	18.27
	Two	32	6.29
	Three times or more	14	2.75
Past medical history	None	453	89.0
	Anemia	18	3.54
	Hypothyroidism	10	1.96
	Hypertension	9	1.77
	Diabetes mellitus	6	1.18
	Asthma	5	0.98
	Rheumatoid	2	0.39
	Breast cancer	1	0.20
	Colon problems	1	0.20
	Heart problems	1	0.20
	Hepatitis B	1	0.20
Hepatitis C	1	0.20	
multiple sclerosis	1	0.20	
Method of delivery	All are normal	298	58.55
	All are CS	138	27.11
	Some are normal and others by CS	73	14.34

3. Practices toward previous breastfeeding:

As shown in Table (3) the practices of mothers toward breastfeeding was described. 33.69% were practicing the breastfeeding during the previous deliveries. Near to half of them reported more than 12 months of breastfeeding by 44.12% while 23.80% breastfeeding for 7-12 months only, 17.77% continue breastfeeding for 3-6 months and 14.28% for less than 3 months. 66.34% reported that all their babies are breastfed and formula fed together, followed by 17.14% do exclusive breastfeeding.

Table 3: Practices toward previous breastfeeding

Factor	N	%	
Did you breastfeed during the previous deliveries?	Yes	315	61.89
	No	50	9.82
	I don't have previous child	144	28.29
How long did you breastfeed in previous deliveries?	<3 months	45	14.28
	3-6 months	56	17.77
	7-12months	75	23.80
	>12 months	139	44.12
Method of feeding previous deliveries:	All my babies are Breastfeeding only	54	17.14
	All my babies are breastfed and formula fed together	209	66.34
	Some of my babies are breastfed and formula fed together	3	0.95
	Some of my babies had exclusive breastfeeding only and some had formula fed plus breastfeeding	49	15.55

4. Practices toward current breastfeeding:

As shown in Table (4) the current practices of mothers toward breastfeeding was described. 55% reported that their infant placed directly on breast/chest (skin to skin contact). Almost half of them 49.71% reported that breast feed immediately after giving birth.

Majority of study sample was breastfeeding their current child during COVID-19 pandemic by 85.66%. The current infant feeding method was 76.60% by breastfeeding and formula together while 23.4% by exclusive breastfeeding. 39.22% breastfeeding 3-6 months for current infant, followed by less than 3 months for 29.58%, then 7-12 months for 21.78%, and then 9.40% for more than 12 months.

Table 4: Practices toward previous breastfeeding

Factor	N	%	
Did your infant placed directly on your breast/chest (skin to skin contact)	No	229	44.99
	Yes	280	55.1
Did you breastfeed immediately after giving birth your current baby?	No	256	50.29
	Yes	253	49.71
	No	73	14.34

Did you breastfeed your current child during COVID-19 pandemic?	Yes	436	85.66
Current infant feeding method	Breastfeeding and formula together	334	76.60
	Exclusive breastfeeding	102	23.4
How long it takes for breastfeeding your current infant?	<3 months	129	29.58
	3-6 months	171	39.22
	7-12months	95	21.78
	>12 months	41	9.40

5. Reasons for breastfeeding

As shown in Table (5) 73.40% of the study sample reported that the sense of responsibility toward the child is the most factor that help them in breastfeeding, followed by the help from the husband with 16.41%, then receiving good health education from health facility and family support to complete the breastfeeding with 5.01% for each. 61.93% found easy for breastfeeding during COVID-19 pandemic, while 38.07% found it difficulty.

35.32% sometimes afraid of breastfeeding during COVID-19 pandemic, while 53.44% did not. 83.02% did not think about stopping breastfeeding during the COVID-19 pandemic. Dry milk was the most reason to stop breastfeeding by 33.19%, followed by baby refused breastfeeding by 23.77%, then mother sick by 14.75% and the rest reasons such as COVID-19 infected, commitment to study and work and insufficient milk not exceed 10% for each.

Table 5. Reasons for breastfeeding

Factor	N	%	
What are the factors that help you in breastfeeding?	A sense of responsibility toward my child	425	73.40
	I found help from my husband to complete the breastfeeding	95	16.41
	I received good health education from health facility	29	5.01
	I found family support to complete the breastfeeding	29	5.01
How was your experience of breastfeeding during covid-19 pandemic?	Easy	270	61.93
	Difficult	166	38.07
Did you afraid of breastfeeding during COVID-19 pandemic?	No	233	53.44
	Yes	49	11.23
	Sometimes	154	35.32
Did you thought about stopping	No	362	83.02
	Yes	33	7.56

breastfeeding during the COVID-19 pandemic?	Sometimes	41	9.40
If not breastfeed or you stop breast-feeding during the pandemic of COVID-19, what are the reasons for that?	Baby refused the milk	58	23.77
	Baby sick	12	4.91
	Complication of CS	2	0.81
	Covid 19 infected	16	6.55
	Cracked nipple	3	1.22
	Dry milk	81	33.19
	Due to my commitment to study and work	21	8.60
	Insufficient milk	15	6.14
	Sick	36	14.75

6.Implementation of safety measures during breastfeeding:

As shown in Table (6) the implantation of safety measures during breastfeeding was described. 50.91% of the study sample reported that they sometimes washed their hand frequently before and after breastfeeding, while 44.26% reported that they always do. However, 64.67% did not wear mask during breastfeeding. 97.01% did not place a barrier between them and their child during the breastfeeding.

Table 6: Implementation of safety measures

Factor	N	%	
Did you wash your hands frequently before and after breastfeeding?	No	21	4.81
	Yes	193	44.26
	Sometimes	222	50.91
Did you wear the mask during breastfeeding?	No	282	64.67
	Yes	58	13.30
	Sometimes	96	22.01
Did you place a barrier between you and your child during the breastfeeding?	No	423	97.01
	Yes	6	1.37
	Sometimes	7	1.60

Attitude of mothers toward breastfeeding during COVID-19 pandemic

As shown in Table (7), 11 statements were employed to reflect the attitudes. The attitudes of mothers toward breastfeeding during the COVID-19 pandemic were measured using a five-point Likert scale (5=strongly agree to 1=strongly disagree). The total score range was between 11 and 55 points, and the achieved score was 47.60±5.37/positive attitude. This value equals 86.55%, indicating that the majority of the participants had an agreement of strongly agree and agree. The mothers had a positive attitude toward breastfeeding during the COVID-19 pandemic.

The scores showed that the level of attitude was considerably high among women. The lowest score was for the statement “I think it is necessary for a breastfeeding mother to get a dose of the corona vaccination,” with a mean score of 2.71±1.56, which still reflected a positive attitude. Furthermore, the other statements achieved a mean score ranging from 3.53±53 to 4.85±42. These scores reflected the positive attitudes of mothers toward breastfeeding during the COVID-19 pandemic.

Relationship between current breastfeeding during COVID-19 pandemic with different variables

As shown in Table (8), a chi-squared test was conducted to examine the relationship between current breastfeeding during the COVID-19 pandemic with different variables. A relationship was found between the methods of delivery and breastfeeding ($\chi^2=10.24$, $p<0.01=0.006$). In total, 60.78% of mothers who were currently breastfeeding delivered normally. Furthermore, 24.54% of breastfeeding mothers had a CS delivery, whereas 42.47% of them did not breastfeed. This indicate that mothers who delivered normally tend to breastfeeding their baby more than those who delivered by CS. A significant relationship was found between breastfeeding of the child during the COVID-19

pandemic and breastfeeding during previous deliveries ($\chi^2=84.82$, $p<0.001$); 67.20% of mothers who were currently breastfeeding also breastfed at their previous deliveries.

A significant relationship was found between breastfeeding of the child during the COVID-19 pandemic and symptoms of COVID-19 ($\chi^2=9.73$, $p<0.01=0.008$). Women who breastfeed had moderate symptoms, and 45.95% of mothers had minor and severe symptoms.

A significant relationship was observed between breastfeeding of the child during the COVID-19 pandemic and breastfeeding when infected with the corona virus ($\chi^2=4.87$, $p<0.05=0.03$); 64.86 of mothers who were currently breastfeeding still breastfed their babies even when infected with the corona virus.

Table 7: Attitude of mothers toward breastfeeding during COVID-19 pandemic

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean	SD
	N	%	N	%	N	%	N	%	N	%		
I think breast-feeding during COVID-19 pandemic support the baby's immunity	1	0.20	1	0.20	24	4.72	41	8.06	442	86.84	4.81	0.53
I think it necessary for the mother to wash the hands before and after breast-feeding	0	0.00	4	0.79	13	2.55	48	9.43	444	87.23	4.83	0.49
I think the breast-feeding during COVID-19 pandemic is easy and possible	3	0.59	19	3.73	89	17.49	45	8.84	353	69.35	4.43	0.94
I think breast-feeding during COVID-19 pandemic has a various benefit for the baby and the mother.	2	0.39	1	0.20	14	2.75	56	11.00	436	85.66	4.82	0.50
I think the mother should start breastfeed immediately after birth, while taking preventive precautions to prevent infection	1	0.20	1	0.20	4	0.79	63	12.38	440	86.44	4.85	0.42
I think it is not necessary for the mother to do a corona virus test before starting breastfeeding	54	10.61	88	17.29	125	24.56	20	3.93	222	43.61	3.53	1.45
I think the mother should have enough information about breastfeeding and how it relates to corona infection	0	0.00	2	0.39	5	0.98	67	13.16	435	85.46	4.84	0.42
I think the mother should continue to breastfeed even if she is infected with the Corona virus	133	26.13	179	35.17	43	8.45	13	2.55	141	27.70	2.71	1.56
I think it is not preferable to wean the child early before two years because of the pandemic	3	0.59	8	1.57	17	3.34	74	14.54	407	79.96	4.72	0.66
I think it is necessary for a breastfeeding mother to get a dose of the corona vaccination	28	5.50	21	4.13	80	15.72	65	12.77	315	61.89	4.21	1.18
I think the corona vaccine is safe for the health of the breast-feeding mother and the child	34	6.68	35	6.88	144	28.29	44	8.64	252	49.51	3.87	1.28
Total score											47.60	5.37

Keys: 11–33=negative attitude, 34–55=positive attitude

Table 8: Relationship between current breastfeeding during COVID-19 pandemic with different variables

Variable		Current breastfeeding during COVID-19 pandemic						Chi square	P value
		Yes		No		Total			
		N	%	N	%	N	%		
Age	< 20 years	11	2.52	2	2.74	13	2.55	2.35	0.67
	20 – 25 years	61	13.99	9	12.33	70	13.75		
	26 – 30 years	136	31.19	24	32.88	160	31.43		
	31 – 35 years	137	31.42	18	24.66	155	30.45		
	<35 years	91	20.87	20	27.40	111	21.81		
Employment	Nurse	11	2.52	1	1.37	12	2.36	2.12	0.71
	Teacher	33	7.57	8	10.96	41	8.06		
	Housewife	346	79.36	59	80.82	405	79.57		
	Other	19	4.36	2	2.74	21	4.13		
	Student	27	6.19	3	4.11	30	5.89		
Education	Primary	12	2.75	1	1.37	13	2.55	1.004	0.91

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	Intermediate	32	7.34	6	8.22	38	7.47		
	Secondary	134	30.73	20	27.40	154	30.26		
	University	249	57.11	44	60.27	293	57.56		
	Other	9	2.06	2	2.74	11	2.16		
Past medical history	Yes	45	10.32	11	15.07	56	11.0	1.44	0.23
	No	391	89.68	62	84.93	453	89.0		
Number of pregnancies	One	103	23.62	19	26.03	122	23.97	0.82	0.85
	Two	99	22.71	18	24.66	117	22.99		
	Three times	79	18.12	14	19.18	93	18.27		
	Four times or more	155	35.55	22	30.14	177	34.77		
Number of deliveries	One	122	27.98	24	32.88	146	28.68	4.20	0.241
	Two	102	23.39	21	28.77	123	24.17		
	Three times	78	17.89	14	19.18	92	18.07		
	Four times or more	134	30.73	14	19.18	148	29.08		
Method of delivery	All are normal	265	60.78	33	45.21	298	58.55	10.24*	0.006
	All are CS	107	24.54	31	42.47	138	27.11		
	Some are normal and others by Cs	64	14.68	9	12.33	73	14.34		
Breastfeed during the previous deliveries	Yes	293	67.20	22	30.14	315	61.89	84.82***	0.000
	No	22	5.05	28	38.36	50	9.82		
	I do not have child	121	27.75	23	31.51	144	28.29		
Symptoms of COVID-19	Minor symptoms	13	35.14	0	0.0	13	32.5	9.73**	0.008
	Moderate symptoms	17	45.95	0	0.0	17	42.5		
	Sever symptoms	7	18.92	3	100.0	10	25		
Breastfeeding even when infected with the corona virus	Yes	24	64.86	0	0.0	24	60	4.87*	0.03
	No	13	35.14	3	100.0	16	40		

* ≤ 0.05 ; ** ≤ 0.01 ; *** ≤ 0.001

DISCUSSION

The present study's aims to investigate the impact of COVID-19 pandemic on attitude and practices of breastfeeding mothers. The current results showed that the majority of the study participants (85.66%) practiced breastfeeding either exclusive breastfeeding or combined feeding, during the COVID-19 pandemic. This finding agrees with that of [9], which showed that 97% of mothers have breastfed their infants during the COVID-19 pandemic in Belgium, and half of them have considered increasing breastfeeding time. These undertakings are a result of staying at home because of the lockdown, which has facilitated breastfeeding and provided mothers with a strong desire to protect their infants from the corona virus through breast milk.

Considering the supporting factors to continue breastfeeding, the present study revealed that the majority of mothers (73.40%) reported that the sense of responsibility toward the child was the most influential factor that helped them in breastfeeding, followed by help from the husband (16.41%), and then good health education provided by a health facility and family support to complete breastfeeding. This result is similar with that of [10] in Indonesia and [11] in the UK. Availability of breastfeeding support is an important influence factor to continue breastfeeding [12], [13], [14], [15].

The current study's findings reported that only 13.30% of mothers wore masks during breastfeeding, and only 44.26% washed their hands before and after breastfeeding. These results are slightly similar with those of [16] in Egypt. They assessed the effectiveness of the precaution guidelines by using an educational intervention and found that the rate of regular hand washing is 36.3% and wearing of facemasks is 25.0%. The low practice of safety measures found in the present study was probably due to the difficulty of using safety measures while breastfeeding and might be caused by the unavailability of

protective measures. Unfortunately, the current study did not investigate the difficulty of using protective measures or the reasons behind the unimplemented safety measures.

In this study, the majority of the study sample (86.55%) had a positive attitude toward breastfeeding during the COVID-19 pandemic. This finding agrees with the many studies of [17], [18], [19] and [20], which showed that most participants have a positive attitude toward breastfeeding during the COVID-19 pandemic. This positive attitude could be attributed to the precautionary guidelines regarding breastfeeding among women during the COVID-19 pandemic, in which women's attitudes toward breastfeeding are based on knowledge and practices that repress positive-directed behavior [16].

In the current study, demographic and obstetric characteristics were used to determine the factors impacting mothers' breastfeeding practices during the COVID-19 pandemic. The results revealed that the significant factors affecting participants' practices of breastfeeding were mode of delivery and previous breastfeeding experience. This result regarding the factor of mode of delivery and its effect on mothers' practices is consistent with the result of [21], which showed that spontaneous vaginal delivery has a significant effect on practices toward breastfeeding, indicating that mothers who have good practices toward breastfeeding had normal delivery. Notably, based on evidence, early breastfeeding initiations associated with the mode of delivery have a great influence on continuous breastfeeding. Therefore, the corona virus arguably slightly affects the changes in mothers' practices regarding breastfeeding compared to spontaneous vaginal delivery and previous breastfeeding experience.

In this study, the results revealed significant factors that affected mothers' attitudes. These factors are mothers' age, employment status, number of pregnancies, number of deliveries, and previous breastfeeding experience. The current study found that

the mother's age was a significant factor in determining positive attitudes toward breastfeeding. In contrast, these findings are inconsistent with the findings of [22], which demonstrated that the mother's age has no major role in breastfeeding during the COVID-19 pandemic. In addition, the results indicated that mothers with four or more deliveries had a more significant relationship to positive attitudes than mothers with only one delivery. These results are consistent with those of [23] reported that women who breastfed for less than 6 months and who had more than one child have strong opinions regarding the benefits and importance of breastfeeding on mothers and child health during the COVID-19 period. A possible explanation for these results was that mothers of subsequent children had more previous experience of breastfeeding, which encouraged them to continue breastfeeding during the COVID-19 pandemic [24]. In this study, the majority of the study sample was not infected with the corona virus, and only 40 out of 509 mothers were infected during breastfeeding. Most infected mothers conducted corona virus tests, had moderate symptoms, and were continuously breastfeeding during the infection period. One of the most important reasons that helped them continue breastfeeding was that the mothers felt that breastfeeding should be continued to avoid the drying of breast milk. These results were consistent with a cross-sectional study conducted in Belgium by [9] they found that numerous breastfeeding women have denied that the COVID-19 infection affected their breastfeeding practices or were somehow responsible for the suspension of breastfeeding. A possible explanation for these results was due to increasing their breastfeeding time because of the coronavirus, especially during the lockdown period, in which they spent a lot of time at home.

CONCLUSION

The WHO encourage mothers who infected or suspected to be diagnosed by COVID-19 to continue breastfeeding undertaking precaution such as washing hand and wearing face mask during the breastfeeding. Notably, based on current study findings, breastfeeding associated with the mode of delivery and other factors have a great influence on continuous breastfeeding. Therefore, the corona virus arguably slightly affects the changes in mothers' practices regarding breastfeeding compared to spontaneous vaginal delivery and previous breastfeeding experience. Therefore, health care workers and media should continuously advise and encourage mothers toward the benefits of breastfeeding to protect their children immunity from risks of disease transmission. Positive attitude and practice towards breastfeeding will help mothers to continue breastfeeding even during pandemics.

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