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Original Article

Assessment of Knowledge, Attitudes and Practices of Breastfeeding Mothers towards Breastfeeding amidst COVID-19 in Selected Child Welfare Clinics of Tiko Health District (Southwest Region- Cameroon)

Évaluation des connaissances, attitudes et pratiques des mères allaitantes à l'égard de l'allaitement au sein durant la COVID-19 dans certains centres de protection maternelle infantile du district sanitaire de Tiko (région du Sud-Ouest, Cameroun)

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ABSTRACT

Objective. To determine the knowledge, attitudes and breast feeding practices amidst COVID-19 in Tiko Health District. **Methodology**. A descriptive cross-sectional study was conducted among breast feeding mothers of infants 0-24 months identified during child welfare clinic visits. Systematic random sampling was used to 384 breast feeding mothers. Self-administered questionnaires were used to assess BF knowledge attitudes and practices. **Results.** 385 women were included. A total of 73.8% [95% CI: 69.3 – 78.2] participants had correct knowledge on breast feeding. Most participants 92.6% believed that Exclusive breast feeding (EBF) should be practiced for six months irrespective of COVID-19. Over three-quarter of them (73.4%) supported breast feeding for up to 2 years with over 93%)[95% CI90.9 – 95.8] emphasizing that prolong breast feeding for two years promotes bonding for the mother and child. Being married and co-habiting were associated with correct knowledge on BF while being a Christian, having a low income level and hospital visits were statistically significantly associated with correct knowledge on breastfeeding. The high knowledge positively influenced breast feeding attitudes and correct breast feeding practices. The positive attitudes were statistically associated with age, education, occupation and marital status. **Conclusion**. Breast Feeding (BF) mothers had correct knowledge, positive attitudes and correct practices towards breast feeding. Efforts should be invested on improving maternal level of education, income and access to maternal health services in order to significantly increase breastfeeding practices and attitudes. Further studies are required quantitatively and qualitatively during peak incidence of COVID-19 pandemic.

RÉSUMÉ

Objectif. Déterminer les connaissances, les attitudes et les pratiques d'allaitement durant la COVID-19 dans le district de santé de Tiko. **Méthodologie**. Étude transversale descriptive menée auprès de mères allaitantes de nourrissons de 0 à 24 mois identifiés lors de visites à la clinique de protection de l'enfance. Un échantillonnage aléatoire systématique a été utilisé pour 384 mères allaitantes. Des questionnaires auto-administrés ont été utilisés pour évaluer les attitudes et les pratiques en matière de connaissance de l'AB. **Résultats**. Au total, 385 femmes ont été recrutées. Parmi elles, 73,8 % [IC à 95 % : 69,3 – 78,2] participantes avaient des connaissances correctes sur l'allaitement. La plupart des participants (92,6 %) pensaient que l'allaitement maternel exclusif (EBF) devrait être pratiqué pendant six mois, quel que soit le COVID-19. Plus des trois quarts d'entre eux (73,4 %) ont soutenu l'allaitement jusqu'à 2 ans avec plus de 93 % [95 % IC 90,9 – 95,8] soulignant que prolonger l'allaitement pendant deux ans favorise le lien entre la mère et l'enfant. Être marié et cohabiter étaient associés à une connaissance correcte de l'allaitement maternel tout en étant chrétien, avoir un faible niveau de revenu et les visites à l'hôpital étaient statistiquement significativement associés à une connaissance correcte de l'allaitement. Les connaissances élevées ont influencé positivement les attitudes en matière d'allaitement et les bonnes pratiques d'allaitement. Les attitudes positives étaient statistiquement associées à l'âge, à l'éducation, à la profession et à l'état matrimonial. **Conclusion**. Les mères allaitantes avaient des connaissances correctes, des attitudes positives et des pratiques correctes vis-à-vis de l'allaitement. Des efforts doivent être investis sur l'amélioration du niveau d'éducation, des revenus et de l'accès aux services de santé maternelle afin d'augmenter de manière significative les pratiques et les attitudes en matière d'allaitement. D'autres études sont requises quantitativement et qualitativement pendant le pic d'incidence de la pandémie de COVID-19.

INTRODUCTION

Since 2019, a new public health crisis has been threatened the world. The emergence and spread of the new coronavirus (COVID-19) or severe acute respiratory coronavirus syndromes have been a huge challenge to public health authorities at all levels including infant feeding practices [1].The infection is reported to present immediate and long-term nutritional challenges among infants and young children as well as amongst the vulnerable population. This will consequently influence the achievement of the sustainable development goals.

Though different vaccines have been discovered there is no approved treatment for COVID-19 and no clinical trial data supporting any prophylactic treatment. Even with available vaccines, there is still a lot of controversies and myths that have hampered the effective scale up and use of the vaccines. The novel coronavirus disease pandemic has influenced perinatal and neonatal care. Infant feeding recommendations from other findings amidst COVID-19 ranges from mother–infant separation and avoidance of human milk feeding, to initiation of early skin-to-skin contact and direct breastfeeding [2]. Scientific findings have equally revealed that improving maternal and infant care services through promoting optimal breastfeeding in the current pandemic can improve the immune system and thus limit COVID 19 infection among infants and young children. It has not been established whether the infection of COVID-19 among infant occurs via breastfeeding or through other modes of transmission [3]. The absence of scientific evidence and the consequent absence of recommendations on breastfeeding has exacerbated the difficulties in developing acceptable standards. This has contributed to inconsistent messages as well as the low level of awareness on COVID-19 leading to the propagation of inadequate and misinformation on COVID-19 and breast feeding with COVID-19 [4]. The findings will serve as a basis for redirecting awareness messages and refining strategies to optimize breast feeding in COVID-19 settings or other epidemic and pandemic settings.

PATIENTS AND METHODS

Study setting/Population

This study was conducted among breast feeding mothers of infants 0-24 months selected from two in two infant/child welfare clinics serving the large population in Tiko Health District, South west Region.

Study design

This was a descriptive cross-sectional study where by self-administered structured questionnaires were used to assess the knowledge, attitudes and practices of breast feeding mothers of infants 0-24 months on breast-feeding amidst COVID-19 during infant/child welfare clinic visits.

Sample size

The sample size was determined using the formulary by Cochran. The sample size suggested in this study was adequate to estimate the knowledge, attitude and practices of breast feeding mothers. Since most studies in the neighborhood of the study site were qualitative studies, we choose 50% as "P" which is universally accepted. The Cochran formula was used to calculate the sample size where the total sample was 384.

$$\mathbf{n = \frac{(Z)^2 \alpha\, p(1-p)}{i^2}}$$

Where:

n = minimum sample size p (knowledge on breast feeding) = 60%

$Z\alpha$ = constant (Confidence interval, 95%) = 1.96 at α = 0.05, i=Precision of the event of interest (degree of accuracy) =0.05

Hence, $n = \frac{(1.96)^2[0.5][0.5]}{0.05^2}$ = **385 participants**

Selection of study participants

A systematic random sampling technique was used to select respondents from the daily attendance list generated at the clinics. Two infant/child welfare clinics were purposively selected based on their large capacity and volumes on the intake of breastfeeding mothers in the study area.

Data collection

The data collection tool was a semi-structured questionnaire which was pretested among breast feeding women with infants 0-24 months. Data was collected by trained data collectors using self-administered questionnaires. Questionnaires were divided into four sections. The first section had questions designed to capture sociodemographic variables. The second, third and fourth sections were designed to capture breast feeding mother's responses on knowledge, attitudes and practices. Questionnaires were checked for completeness each time it was administered and returned from the field.

Data analyses

The quantitative data collected was entered into an excel spread sheet and analyzed using SPSS vs 26. Socio-demographic data and other variables were summarized into percentages. On the basis of the participants' responses, their knowledge, attitudes, and practices of breastfeeding were assessed. Mean knowledge, attitudes and practices scores were analyzed on a scale of n. Participants were considered to have correct knowledge, positive attitudes and correct practices score based on their scores above the mean group score.

RESULTS

Socio-demographic characteristics of study participants

385 women were included. More than half of the women were in the age range 26-36 years (59.8 %) and 7.5% were within the age range 37-46 year. Many of the breastfeeding mothers were business women 125(32.9%). Of the 89 (23.48%) who started breastfeeding after one hour of birth, 19 said they were under anesthesia due to C-section, four indicated that the baby was sleeping or baby was weak ; three said breast milk was not flowing and the rest gave no reason. Most of the respondents 330 (88%) had received information on breast-feeding during ANC in the health units while a minimal 1.3% received information from experienced women/friends.

Knowledge, Attitudes and Practices of breast-feeding mothers towards breast feeding

A majority 373 (98.2%) [95% CI: 96.8 – 99.5] of the breast-feeding mothers belief colostrum is important for their babies and that BF should be done within one hour of birth 339 (89.2%) [95% CI: 86.1– 92.3]. Majority 351(92.6) [95% CI: 89.9 – 95.2] also belief that exclusive breast feeding should be done for six months irrespective of COVID-19 and that mothers infected with COVID 19 should not breastfeed 239 (63.6) [95% CI: 58.8– 68.4]. About a three-quarter of the women 279 (73.4%) [95% CI: 68.9 – 77.8] supported breast feeding for up to 2 years and that this helps in bonding the mother and child 355 (93.4%) [95% CI 90.9 – 95.8]. Many 290 (76.5%) [95% CI: 72.2 – 80.8] believe that breast milk loses its value when pumped out or stored in the milk bank. Many 248(65.3%) [95% CI:

48.7 – 67.9] however believed that pumped breast milk can be stored at room temperature for up to 8 hours and that it can also be stored in the refrigerator or up to 8 days 250(66.0%) [95% CI: 61.2 – 70.7]. Majority 340(89.7%) [95% CI: 86.6 – 92.7] of the mothers believe exclusive breast feeding reduces chance of diarrhea. The main sources of information about breast feeding were identified as follows: Hospital 330 (88.0%) [95% CI: 84.5 – 91.5] and media (radio/TV) 40 (10.7%) [95% CI: 7.2 – 13.9].

Proportion of mothers with correct knowledge on Breast Feeding

Overall, the mean knowledge score of breast feeding was 7.38 (SD = 1.94) on a scale of 11. Generally, 73.8% [95% CI: 69.3 – 78.2] of the study participants had correct knowledge on breast feeding while 26.2% [95% CI: 21.8 – 30.6] of the participants had incorrect knowledge on breast feeding.

Table: 1. Socioeconomic/ Demographic Characteristics

Indicator	Frequency	Percentage (%)
Age/Years		
15-25	122	32.7
26-36	223	59.8
37-46	28	7.5
Total	380	100
Marital status		
Married/cohabiting	298	78.4
Single/widow/divorced	82	21.6
Total	380	100
Religion		
Christian	352	92.9
Muslim	24	6.3
Traditionalist	3	0.8
Total	379	100
Level of Education		
No formal/primary	74	19.5
Secondary	206	54.2
Tertiary	100	26.3
Total	380	100
Occupation		
Farming	36	9.5
HCW/Administrator	68	17.9
Business	125	32.9
House help	13	3.4
House wife	71	18.7
Others	67	17.6
Total	380	100
Time of starting BF		
Within 1 hour of birth	291	76.6
After 1 hour after birth	89	23.4
Total	380	100

Others= teachers, students, hair dressing, secretariat duties, seamstress, and Banker/Accountant

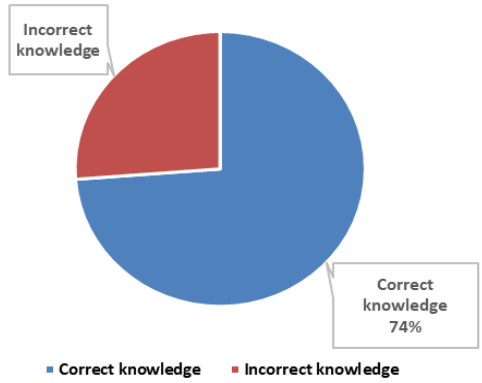

Figure 1: Proportion of Mothers with Correct knowledge on Breast feeding

Table 2: Socioeconomic/ Demographics factors influencing breastfeeding mother's knowledge on breast feeding.

	Correct knowledge No (%)	X^2	p-value
Age of mother (years)			
15-25	115 (94.3)		
26- 36	217 (97.3)	3.27	0.195
37- 46	28 (100)		
Marital status			
Married/cohabiting	291 (97.7)	9.30	**0.006***
Single/widow/divorced	74 (90.2)		
Religion			
Christian	340 (89.7)		**0.016***
Muslim	22 (5.8)	8.29	
Traditionalist	45 (0.5)		
Education			
No formal/primary	70 (18.4)		0.525
Secondary	200 (52.6)	1.28	
Tertiary	95(25.0)		
Occupation			
Farming	35 (9.2)	3.27	0.657
HCW/Administrator	63 (16.6)		
Business	121 (31.8)		
House help	12 (3.2)		
House wife	691 (18.2)		
Others	65(17.1)		
Monthly income (F CFA)			
<50,000	223 (60.9)	12.89	**<0.001***
50,000-200,000	110 (30.1)		
>200,000	20 (5.5)		
Age of Baby			
< 6 months	245 (64.5)	0.001	0.971
≥ 6 months	120 (31.6)		
Time of BF after birth			
Within 1 hour after birth	280 (73.7)	0.092	0.758
After 1 hour after birth	85 (22.4)		
Source of information on Breast feeding			
Hospital	323 (86.1)		**<0.0001***
Media (Radio/TV)	34 (9.1)	17.864	
Experienced women/friends	05 (1.3)		
Total	837(85.4)		

Socioeconomic and demographic factors influencing breast feeding mother's knowledge on breast feeding.

Mothers who were married as well as those co-habiting (p=0.006) were associated with correct knowledge on BF than single mothers. Being a Christian (p=0.016), having a low income level (p<0.001), and hospital as source of information (p<0.0001) were statistically significantly associated with correct knowledge on breastfeeding.

Table 3: Attitudes of mothers towards breast feeding

Attitude towards BF	no (%)				
	Strongly. Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Breastfeeding is very good for the baby at all times	84(22.1)	6(1.6)	3(0.8)	73(19.2)	214(56.3)
2. Formula feeding is the best option during COVID-19	83(21.8)	102(26.8)	70(18.4)	80(21.1)	42(11.1)
3. BF within one hour of birth is important	79(20.8)	21(5.5)	12(3.2)	101(26.6)	167(43.9)
4. Throwing away colostrum is important	114(30.0)	207(54.5)	17(4.5)	19(5.0)	23(6.1)
5. Frequent breast feeding may expose the child to COVID-19.	97(25.5)	184(48.4)	32(8.4)	44(11.6)	22(5.8)
6. Continues breast feeding is beneficial to the Child despite COVID-19.	65(17.1)	56(14.7)	44(11.6)	112(29.5)	103(27.1)
7. It is better not to breast feed up to 6 months during COVID-19 as one is not sure of their hygiene	102(26.8)	154(40.5)	48(12.6)	53(13.9)	23(6.1)
8. Women should not breast feed in public places due to COVID-19	105(27.6)	129(33.9)	41(10.8)	70(18.4)	35(9.2)
9. Exclusive breast feeding is old fashion	91(23.9)	197(51.8)	43(11.3)	29(7.6)	20(5.3)

Attitude of mothers towards Breast Feeding

Majority of the mothers agreed that BF was good for the baby at all times (75.5%) [95% CI: 71.2 – 79.8]. A total of 185 (48.6%) [95% CI: 43.6-53.6] of the women belief BF is the best option during COVID-19 and that BF within 1 hour of birth is important (70.5%) [95% CI: 66.0-75.0]. Majority (73.9%) [95% CI: 69.5-78.3] of the mothers did not believe that frequent BF may expose the child to COVID-19 and that it was beneficial for the baby (56.6 %) [95% CI: 51.6-61.6]. More than half (67.3 %) [95% CI: 62.5-72.0] of the mothers think BF can be done for up to six months irrespective of COVID-19. Many (61.5 %) [95% CI: 56.6-66.4] also think mothers should breast-feed in public places irrespective of COVID 19 and that exclusive breast-feeding is not old fashion (75.5 %) [95% CI: 71.2 – 79.8].

Proportion of mothers with positive attitude towards Breast Feeding

Overall, the mean attitude score towards BF was 26.2 (SD = 1.37) on a scale of 45. The proportion of women with a positive attitude towards BF was 58.2% [95%CI: 53.2 – 63.6] while the proportion of women with negative attitudes towards BF was 41.8% [95%CI: 36.8-46.8].

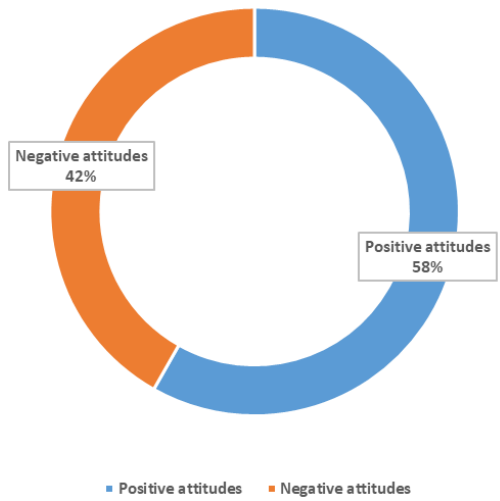

Figure 2: Proportion of mothers with positive attitudes towards breast feeding

Socioeconomic and demographic factors influencing breast feeding mother's attitudes towards Breast feeding

Several Socioeconomic and demographic factors were associated with attitudes. Single/widow/divorce (P=0.313) were associated with positives attitudes towards breast feeding than those who were married or cohabiting. Tertiary education p=0.637) was equally associated with positive attitudes.

Proportion of mothers with correct practices towards Breast Feeding

Overall, the mean practice score of breast feeding was 7.42(SD = 1.74) on a scale of 12. Generally, 74.2% [95% CI: 69.8 – 78.6] of the study participants had correct practices towards breast feeding while 25.8% [95% CI: 24.4 – 30.2] of the participants had poor practices towards breast feeding.

Socioeconomic and demographic factors influencing breast feeding mothers practices towards breast feeding.

Mothers who were within the age 26- 36 years (p=0.001) were associated with correct practices towards BF than those of other age groups. Mothers who were Single/widow/divorce (P=0.003) were associated with correct practices than those who were married or cohabiting while mothers who had attended secondary education (P=0.035) were statistically significantly associated with correct breast feeding practices amidst COVID-19.

Mothers who were farmers (P= 0.042) were associated with correct breast feeding practices than those of other profession while having a low income level (P=0.002) was associated with breast feeding practices.

DISCUSSION

Knowledge, attitudes and practices of breast feeding mothers towards breast feeding (BF)

The level of literacy among the respondents was quite high with 54.2% and 26.3% having attended secondary education and tertiary education respectively. This rate influenced the respondents' Knowledge on breast feeding amidst COVID-19 positively. Majority 373(98.2%) of the respondents belief colostrum is important for their babies.

Table 4: Practices of breast feeding mothers towards breast feeding

Variable	Frequency No (%)	95%CI
Complementary food should be introduced at 6 months of age.		
Yes	352(92.6)	90.1 – 95.1
No	26(6.8)	4.3 – 8.3
I intend to breast feed for less than 6 moths		
Yes	37(9.7)	6.7 – 12.7
No	334(89.7)	86.7– 92.7
Mothers infected or suspected with COVID-19 should not breast feed.		
Yes	163(42.9)	86.1– 92.3
No	217(57.1)	52.1 – 61.9
COVID-19 is transmitted through breast milk		
Yes	88(23.2)	19.0 – 27.4
No	291(76.6)	72.4– 80.8
Have you received a COVID vaccine?		
Yes	123(32.4)	27.7– 37.1
No	256(67.4)	62.7 – 72.1
Were you putting on face mask before breast feeding during the peak of COVID-19		
Yes	169(44.5)	39.5 – 49.5
No	210(55.3)	50.3– 60.3
Did you observe hygienic measure during breast feeding		
Yes	351(92.4)	90.9 – 95.8
No	27(7.4)	4.1 – 9.1
During COVID-19 pandemic I reduced the rate of breastfeeding not to transmit virus to my baby		
Yes	111(29.2)	24.6 – 33.7
No	269(70.8)	66.2 – 75.5
Do you think COVID-19 positive mothers should still breast feed?		
Yes	214(56.3)	19.2 – 27.8
No	166(43.7)	72.2 – 80.8
During COVID 19 lock down I had to completely stop breast feeding my child early to introduce artificial food.		
Yes	72(18.9)	15.2 – 22.8
No	330(81.1)	77.2 – 85.0
With the advent of COVID-19, I always clean my breast before breast feeding		
Yes	313 (82.4)	78.6 – 86.2
No	67(17.6)	13.8 – 21.4
How long did you breast fed the last child(children) or are still breast feeding?		
< 6 months	48(12.6)	9.3 – 15.9
>6 months	330(86.8)	83.5 – 90.1

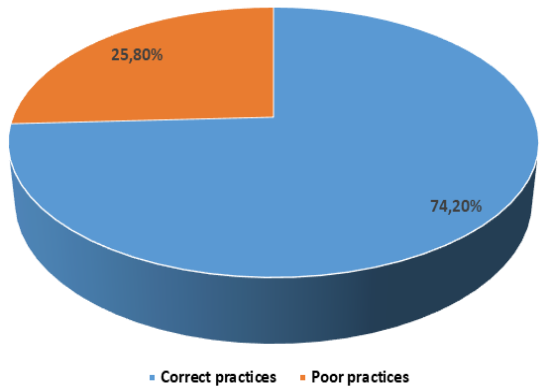

Figure 3: Proportion of mothers with correction practices towards breast feeding.

This is similar to other findings in which the rate of colostrum intake to be 88.8% but only 45.2% of infants under 6 months were exclusively breastfed (EBF)[5].

The high literacy level in this study (54.2%) and high knowledge on the benefit and timely use of colostrum (98.2%) is associated with knowledge on COVID-19 and breast feeding. Although most participants 351(92.6%) belief that EBF should be done for six months irrespective of COVID-19, over half of them 239 (63.6%) belief that mothers infected with COVID 19 should not breast feed. These findings are somehow contradicting but consistent with other research result [6,7] where the EBF prevalence varied at different times during the postpartum period.

Close to three-quarter of respondents 279 (73.4%) supported breast feeding for up to 2 years and 355 (93.4%) emphasized that this helps in bonding for the mother and child. Breast milk has anti-infective properties[8]. Therefore promoting mother-baby bonding and prolonging breastfeeding for up to 2 years and beyond improves child's immunity and increases resistance to COVID-19 infection.

Majority 340 (89.7%) of the mothers believed exclusive breast feeding reduces chance of diarrhea. This confirms many findings by UNICEF where breast milk is promoted as the best food for the infant because its anti-infective properties can prevent childhood infections [8]. The main sources of information about breast feeding identified were Hospital 330 (88.0%) and media (radio/TV) 40 (10.7%). This finding confirms the importance of health facility in the dissemination of health information.

Correct Knowledge of mothers on breast feeding amidst COVID 19

Generally, 73.8% [95% CI: 69.3 – 78.2] of participants had correct knowledge while 26.2% [95% CI: 21.8 – 30.6] had incorrect knowledge of breast feeding amidst COVID-19. Similar findings were identified in a study on Knowledge, attitude and practice regarding breastfeeding among COVID-19 positive mothers delivered in a tertiary care Centre in India where 74.6% of mothers had good knowledge [9].

Other socioeconomic and demographic factors influencing mother's knowledge included married as well as co-habitation (p=0.006) which were associated with correct knowledge on BF. In this study, over 78% were either married or cohabiting with close to 22% being Single/widow/divorced. Being a Christian (p=0.016), having a low income level (p<0.001) were statistically significantly associated with correct knowledge on breast feeding [10]. The finding is similar to another study where 74.6% of mothers had good knowledge with a marital proportion of over 98% married [9].

Attitude of mothers towards Breast Feeding.

The attitude towards breast feeding was quite positive as majority of the mothers, 75.5% agreed that BF was good for the baby at all times. This assertion is supported by findings from a Cameroonian study [2]. However, this proportion is far above a finding in United Arab Emirates study where only about 21% of mothers had a good breastfeeding attitude while 53% and 26% had a fair attitude and a poor attitude respectively [11]. In this study, close to 49% of the women believed BF is the best option

during COVID-19 and about 70% said that BF within 1 hour of birth is important. Though the proportion of early initiation to BF is much lower compared to 76% in another study, this is consistent with other studies which revealed that both the COVID-19 confirmed cases 58.3% and suspected 52.6% groups, presented significantly lower rates of breastfeeding as compared with the control group which was 95.2% [6, 12].

In this study, majority, 73.9% of the mothers did not believe that frequent BF may expose the child to COVID-19 and close to 57% agreed that BF was beneficial for the baby. Other studies have confirmed that most of the COVID-19 cases reported had other reasons for the infection other than breastfeeding [13]. Over 67% of the mothers think BF can be done for up to six months irrespective of COVID-19. Many of them 61.5% also think mothers should BF in public places irrespective of COVID 19 and 75.5% think that exclusive breastfeeding is not old fashion. This is contrary to a Mexican study, where there was widespread notion that mothers with COVID-19 should not breastfeed [14].

Proportion of mothers with positive attitude towards Breast Feeding.

The proportion of women with a positive attitude towards BF was 58.2% while the proportion of women with negative attitudes towards BF was 41.8%. The negative attitude proportion is much lower than in another study [15] where 53.7% of the respondents had a negative attitude.

In this study positive attitudes towards breast feeding was statistically associated with age, education and occupation. Roughly 57%, 58% and 68% of respondents within the ages of 15-25, 26-36 and 37-46 respectively had positive attitudes towards breast feeding. The positive attitude among the participants who had attended tertiary education was quite higher 62% compared to those with primary and secondary which was about 55% and 57% respectively. A higher proportion, 77.8% of the participants with positive attitude were farmers followed by house helps and housewife about 60%. This is similar to one study where the attitude of the respondents towards successfully controlling of COVID-19 was statistically associated with age, marital status, education and occupation [15].

Proportion of mothers with correct practices towards Breast Feeding

Over 74% of the participants had correct practices towards breast feeding while 25.8% had poor practices. Our study revealed that breastfeeding practices of most participants during the COVID-19 lockdown remained similar to the patterns before lockdown which was similar to findings obtained by Piankusol et al., 2021 [18] . This was however in contrast to other studies where breast feeding mother's correct practices during the COVID-19 pandemic was 40.7% and more than half (51.4%) had knowledge on skin-to-skin contact during the COVID-19 pandemic, but two-thirds (66.4%) of them did not know about rooming-in and did not practice exclusive breast feeding[16,17].

CONCLUSION

Statistically breast feeding mothers had correct knowledge, positive attitudes and correct practices towards BF during the COVID-19 pandemic. Being married and co-habiting were associated with correct knowledge on BF while being a Christian, having a low income level and hospital visits were statistically significantly associated with correct knowledge on breastfeeding. The high knowledge on breast feeding positively influenced breast feeding attitudes and the positive attitudes were statistically associated with age, education, occupation and marital status. Most of the participants had correct breast feeding practices and the lockdown provided opportunities to spend more time with their babies. The proportion of women with a positive attitudes influenced the proportion of those with correct practices. Efforts should be invested on improving maternal level of education, income, infant nutritional counselling and access to maternal health services in order to significantly increase the rate of exclusive breast feeding. Our study therefore encourages the staff at infant/children welfare clinics to continue health education and health promotion at clinics and through social media platforms to further improve on the knowledge and practices of breast feeding mothers for healthy babies in the communities.

Perspectives for future studies

Large scale studies are required to assess the impact of COVID-19 on breast feeding practices of mothers to include more health facilities. Other study is needed to assess the knowledge, attitudes of healthcare workers towards BF mothers at post COVID-19.

Study Limitations

The data was collected during the period with low incidence of COVID 19 and the preventive and control measures were relaxed. Our study was limited to just two infant and children welfare clinics in the Mutengene Health District so many not be a true representation of the entire Region. However random sampling was done and healthcare facilities selected based on their capacity to host large number of breastfeeding mothers in the study area.

List of abbreviations

BF – Breast feeding
COVID-19 – Coronavirus disease 2019
EBF - Exclusive breast feeding
WHO – World Health Organization

Ethics approval and consent to participate

Ethical clearance was obtained from the Cameroon Baptist Convention Health Services Institutional Review Board (IRB no: IRB2022-21). The willingness of the study participants was asked using written and verbal consent. Participants were free to withdraw from the study if they felt so with no effect on them or the care they received at the infant/child welfare clinics.

Competing interests

The authors declare that they have no competing interests.

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NA

Authors' contributions

GNN participated in the conception, design, data collection, drafting of the manuscript, correction and proof reading for scientific content. CWA participated in the design of data

collection tools, data analysis/interpretation, manuscript writing and proof reading of final manuscript for scientific content. All authors read and approved the final copy of the manuscript.

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