

Knowledge, Attitudes, and Practice of mothers toward permanent and temporal contraindications of Breast Feeding in Taif city, Saudi Arabia

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Abstract

Introduction: Breastfeeding plays an important role in newborn life as it gives nutritional and emotional dependency of the baby on the mother. While there are a lot of contraindications of breastfeeding, not all infectious diseases prevent breastfeeding as they can be treated and controlled

Awareness of the mother about relative and absolute contraindications of breastfeeding is very important to preserve the health of her baby.

Aim: In this study, we would like to know the level of awareness about the relative and absolute contraindications of breastfeeding among mothers of Taif city

Methodology: This cross-sectional study was conducted in Taif city, KSA from January 2021 to June 2021, and data was obtained by online questionnaire. Data was entered through Excel version 16.16.23, and all Statistical analysis was done by using SPSS ver23 (IBM corp. the USA) by an independent biostatistician. The categorical variable was analyzed by using Pearson's Chi-square test. Continuous variables obtained are expressed as mean and standard deviation. The significance value (p-value) <0.05 is considered statistically significant

Result: The assessment of knowledge level related to breastfeeding showed that only 7.9% had good knowledge, and most of the participants had poor knowledge (82.1%). When we assessed the relationship of this knowledge level with the age of the mothers, it was found that mothers who were 18-28 years of age had comparatively more 'good' knowledge (20.0%) than other age groups

Conclusion: In general, level of awareness in terms of contraindications of breastfeeding in our study was very low, so we need to increase awareness of Healthcare professionals as they have a critical role in spreading information and encouraging women to breastfeed. The health education program should be implemented as soon as possible.

Key words: breastfeeding, Knowledge, Attitudes, and Practice of mothers, Taif city, Saudi Arabia

Introduction

Breastfeeding should be a vital part of newborn life. It provides nutritional and emotional needs of the baby [1].

Breastfeeding has been classified by the World Health Organization as exclusive, predominant, or complimentary. Exclusive breastfeeding refers to the use of breast milk only.

Predominant breastfeeding refers to breast milk used as a predominant source of nourishment. It can include water and water-based drinks, fruit juice and ORS, drops or syrups (vitamins, minerals and medicines).

Complementary feeding is breast milk use along with any food or liquid, including non-human milk and formula [2]. The WHO recommends exclusive breastfeeding up to 6 months old, with continued breastfeeding along with appropriate complementary feeds up to 2 years old or beyond [3].

There are many contraindications during breast feeding, in some instances continuing breastfeeding is typically recommended, while in other rare conditions it isn't recommended [4].

Concerns and questions on various health-related conditions regarding infant breastfeeding should be discussed and reevaluated [5].

In general, acute infectious diseases within the mother aren't a contraindication to breastfeeding, if such diseases are readily controlled and treated. Breastfeeding contraindications are due to maternal or fetal causes. Maternal causes of breastfeeding contraindication include infectious diseases such as active untreated tuberculosis, active varicella (if the infection is acquired between 5 days before the delivery and three days after the delivery), acute hepatitis A and active cytomegalovirus or using drugs (such as amphetamines, cocaine, and heroin), and any therapeutic medication indicates a caution [6]. HIV-1, HIV-2, HTLV-I, and HTLV-II are the only real infectious diseases that are reconsidered absolute contraindications to breastfeeding [7,8].

In developed countries, the yellow jack vaccine and smallpox vaccine are the only contraindicated vaccines during breastfeeding [9].

Other medical conditions within the infant are Galactosemia, Phenylketonuria, inborn errors of metabolism, genetic abnormality, Milk protein allergy [5] [10].

In Saudi Arabia, the government and various nongovernmental organizations exert many efforts to increase awareness and thus the foremost natural and safest practices of feeding are supported by a considerable number of studies that are carried out [6][11].

Methodology

This cross-sectional study was conducted in Taif City between the period January 2021 to June 2021, and aimed to assess the knowledge, attitude, and practices related to contraindications of breastfeeding. Ethical approval was taken from the research ethics committee at Taif University, Taif City, KSA.

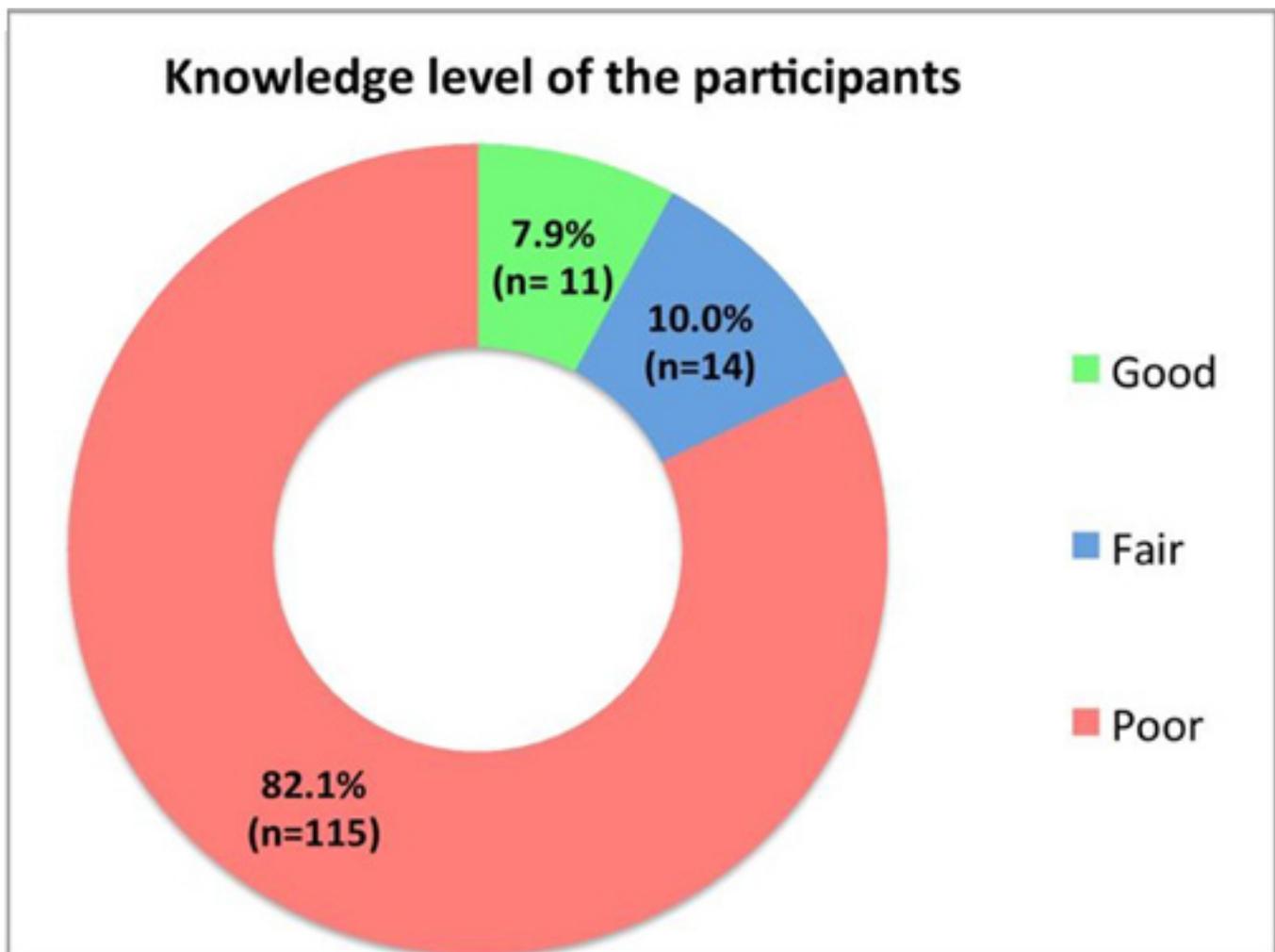
We included the mothers who are currently breastfeeding their children in Taif city. And we excluded any mothers who refused to answer the questionnaire or left an incomplete survey. The data was gathered via a self-administered online questionnaire that included several questions about sociodemographic characteristics, Maternal knowledge of the proper time to start breastfeeding, knowledge about the nutritional advantages of breastfeeding, the mother's practices of breastfeeding her baby and knowledge of mothers about contraindications of breastfeeding.

After data was collected, it was coded and entered into statistical software IBM Statistical Package for Social Sciences, Version 23 (SPSS Inc., Chicago, IL, USA) for data analysis. Categorical variables were analyzed using Pearson's Chi-square test. Continuous variables obtained were expressed as mean and standard deviation. The significance value (p-value) <0.05 was considered statistically significant.

Results

The current study assessed the knowledge, attitude, and practices related to breastfeeding among mothers who are currently breastfeeding their children in Taif city. The sociodemographic characteristics showed that 32.1% were 18-28 years, 29.3% were 29-38 years, 27.9% were 39-48 years, and 10.7% were 48 or more years of age. The majority of the participants were Saudi citizens (93.5%), and 75.7% had a university level of education [Table 1]. Most of the questions in the knowledge section of the questionnaire were regarding contraindications of breastfeeding. The questionnaire had 23 items that measured the knowledge related to breastfeeding. Each correct response was given a score of 1 and wrong answers were given no scores. The scores for each participant were calculated to give the total score for knowledge, which was converted into categories based on the percentages: Good >75%, Fair=60-75%, Poor=<60%.

The assessment of knowledge level related to breastfeeding showed that only 7.9% had good knowledge, and a majority of the participants had poor knowledge (82.1%) [Figure 1]. When we assessed the relationship of this knowledge level with the age of the mothers, it was found that mothers who were 18-28 years of age had comparatively more 'good' knowledge (20.0%) than other age groups, which showed a statistically significant association (p=0.003). Similarly, employed mothers demonstrated comparatively more 'good' knowledge than unemployed mothers (p=0.020). There was no statistically significant association seen between knowledge level and nationality (p=0.352).



and also with the educational level of the participants ($p=0.884$) [Table 2]. It was found that 88.6% reported that breastfeeding should be started immediately after delivery and only 45% believed that breastfeeding is ideal for 4-6 months of life as recommended by WHO. When asked about the ingredients of breast milk, 52.9% agreed that it has all three contents such as carbohydrates, fat and proteins. At the same time, only 28.6% knew that it contained all the essential minerals such as Iron, Calcium, phosphate, Vitamin C, & Vitamin D [Table 3]. It was found that 64.3% believed that there are some permanent contraindications for BF, and 75.7% agreed that there are some temporary contraindications. The knowledge related to contraindications of various maternal diseases is given in Table 4.

When we assessed the practices and attitudes related to BF, only 29.3% agreed that they did exclusive BF for their child and this exclusive BF was comparatively more reported in the age groups of 18-28 years and >48 years, which showed a statistically significant association ($p=0.018$). The majority of the mothers (97.1%) in our study agreed that they like to breastfeed their baby and it was found to be reported by all the unemployed mothers ($n=78$) ($p=0.023$). It was reported by 70% of the mothers that they like to continue BF till the child becomes six months old. When we assessed this relationship with age, it was found that age groups of 18-28 years and 29-38 years had

comparatively reported this attitude more than other age groups ($p<0.001$). Similarly, unemployed mothers reported that they would like to continue BF till six months (79.5%), which was more than that reported by employed mothers (58.1%) that showed a statistically significant association ($p=0.006$). It was reported by 74.3% of the mothers that they would like to continue breastfeeding their child till the age of 2 years, and 56.4% agreed that they would like to advise other mothers on breastfeeding [Table 5].

Table 1: Sociodemographic characteristics of the participants

		N	%
Age (years)	18-28	45	32.1
	29-38	41	29.3
	39-48	39	27.9
	>=48	15	10.7
Employment status	Employed	62	44.3
	Unemployed	78	55.7
Nationality	Saudi	131	93.6
	Non-Saudi	9	6.4
Educational level	Primary	2	1.4
	Secondary or intermediate	25	17.9
	University	106	75.7
	Post graduate or more	7	5.0

Table 2: Knowledge level and its relationship with sociodemographic characteristics

		Knowledge			Total	p value
		Good	Fair	Poor		
Age (years)	18-28	9	7	29	45	*0.003
		20.0%	15.6%	64.4%	32.1%	
	29-38	1	2	38	41	
		2.4%	4.9%	92.7%	29.3%	
	39-48	0	5	34	39	
		0.0%	12.8%	87.2%	27.9%	
	>=48	1	0	14	15	
		6.7%	0.0%	93.3%	10.7%	
Work	Employed	9	4	49	62	*0.020
		14.5%	6.5%	79.0%	44.3%	
	Unemployed	2	10	66	78	
		2.6%	12.8%	84.6%	55.7%	
Nationality	Saudi	11	14	106	131	0.352
		8.4%	10.7%	80.9%	93.6%	
	Non-Saudi	0	0	9	9	
		0.0%	0.0%	100.0 %	6.4%	
Education	Primary	0	0	2	2	0.884
		0.0%	0.0%	100.0 %	1.4%	
	Secondary or intermediate	2	2	21	25	
		8.0%	8.0%	84.0%	17.9%	
	University	9	12	85	106	
		8.5%	11.3%	80.2%	75.7%	
	Post graduate or more	0	0	7	7	
		0.0%	0.0%	100.0 %	%5.0	

p-value <0.05 is considered statistically significant

Table 3: General knowledge related to exclusive breastfeeding

		0	N	%
Ideal time to start breastfeeding	Immediately after delivery		124	88.6
	Not immediate		16	11.4
The diet that should be given to baby after delivery	Glucose		4	2.9
	Breast milk		119	85.0
	Artificial milk		4	2.9
	All of the above		13	9.3
The duration of BF regulated by desire of baby	Yes		99	70.7
	No		41	29.3
BF is ideal for 4-6 months of life as recommended by WHO	Yes		63	45.0
	No		77	55.0
Breast milk has all the following ingredients: Carbohydrates, Fat & Protein	Yes		74	52.9
	No		66	47.1
Breast milk has all the following minerals: Iron, Calcium, phosphate, Vitamin C, Vitamin D	Yes		40	28.6
	No		100	71.4

Table 4: Knowledge related to contraindications of breastfeeding			
	(%) Responses		
	Yes	No	Don't know
Contraindicated Maternal disorders	66.4	4.3	29.3
Infectious diseases such as gastroenteritis, upper respiratory tract infections in the mother are not a contraindication to breastfeeding	39.3	7.9	52.9
Contraindicated in active untreated tuberculosis	22.9	2.9	74.3
Contraindicated in active varicella	39.3	7.1	53.6
Contraindicated in acute hepatitis A	35.7	5.0	59.3
Contraindicated in active cytomegalovirus	73.6	5.0	21.4
Contraindicated in using some drugs	42.9	7.1	50.0
Absolutely contraindicated in human immunodeficiency virus-1, human immunodeficiency virus-2	31.4	5.0	63.6
Contraindicated with small pox vaccine lymphotropic virus-I, and human T-cell lymphotropic virus-II	30.0	14.3	55.7
Contraindicated with Yellow fever vaccine	25.7	12.1	62.1
Contraindicated with fetal Galactosemia	17.9	5.7	76.4
Do you know that breastfeeding is contraindicated with some fetal disorders	35.0	7.9	57.1
Contraindicated with fetal Phenylketonuria	20.7	7.1	72.1
Contraindicated with fetal Lactose intolerance	27.9	12.9	59.3

Table 5: Practices and attitudes related to breastfeeding

		N	%	P value		
				Age	Employment	Educational level
Type of breastfeeding baby in the first six months	Exclusive breastfeeding	41	29.3	*0.018	0.221	0.187
	Predominant breastfeeding	38	27.1			
	Complementary feeding	61	43.6			
Likely to breastfeed baby	Yes	136	97.1	0.457	*0.023	0.724
	No	4	2.9			
Like to continue breastfeeding Till 6 months (Exclusive BF)	Yes	98	70.0	*0.001>	*0.006	0.468
	No	42	30.0			
Like to continue breastfeeding Till 2 years	Yes	104	74.3	0.076	0.681	0.368
	No	36	25.7			
Likely to advise other mothers to breastfeed	Yes	79	56.4	0.272	0.583	0.062
	No	22	15.7			
	I don't know	39	27.9			

Discussion

Epidemiological data worldwide shows that breastfeeding (BF) has declined in recent years due to many factors and the most important ones being urbanization and maternal employment [12][13][14]. Thus the current study aimed at assessing the knowledge, attitude, and practices related to breastfeeding among lactating mothers who had children less than 2 years in Taif city. The findings of the current study showed that the majority of participants had inadequate knowledge regarding breastfeeding. A recent study done in the United Arab Emirates showed that 51.2% of the mothers had good knowledge, and only 5.5% had poor knowledge about BF [15]. It was found that the majority of the mothers (88.6%) had the opinion that BF should be started immediately after 1 hour of delivery, which complies with the recommendation of WHO [16]. According to the WHO's Eastern Mediterranean Regional Office (EMRO), the rate of early breastfeeding initiation is very high (>60%). However, a decline in the rate of BF for the infant under six months has been found in the Middle East countries [17]. In this study, it was found that a good level of knowledge was comparatively more among mothers of age group 18-28 years. This could be due to better utilization and access to health information resources and social media at this age compared to older age groups. Furthermore, the educational level of this age group might also have influenced the knowledge level. But our study didn't show any significant association with mother educational level and knowledge related to BF. It is reported that mothers who have sufficient knowledge of breastfeeding recommendations were more likely to have optimal BF practices [15], [18], [19]. Our study also found that employed mothers had comparatively better knowledge related to BF than unemployed mothers. This could also be related to the mother's educational level, where mothers with higher educational levels have an increased chance of getting employed than those with lesser education [20]. Maternal education has been found as a strong determinant for EBF [21].

The knowledge related to contraindication was not sufficient among our study participants. It was found that only 22.9%, 39.3%, 20.7%, and 27.9% of the mothers knew that it is contraindicated in active untreated tuberculosis, active varicella infections, fetal Phenylketonuria, and fetal Lactose intolerance, respectively. Only 17.9% and 31.4% knew that it was contraindicated with HIV and fetal Galactosemia, respectively. Although many infectious diseases are not contraindicated in breastfeeding, some temporary and permanent contraindications have been recommended [22]. The only real infectious contraindications to BF are human T-cell lymphotropic viruses (HTLV) I and II and HIV-1 and HIV-2 in food resource-rich countries [23], [24]. Evidence shows that EBF protects children from many infectious diseases such as gastroenteritis, upper respiratory or lower respiratory tract infection, otitis media, and respiratory syncytial virus bronchiolitis [22]. In some infectious diseases such as Ebola and Marburg hemorrhagic fevers, it is always recommended to temporarily halt BF till the mother becomes clinically well [22], [25]. In some

infectious diseases, preventive interventions could be done for the infant, such as vaccination, prophylactic antibiotic medications, or immune serum globulin, while continuing to breastfeed the child [22], [26]. In mothers who have taken vaccines such as the smallpox vaccine and yellow fever, vaccine during the lactating period is contraindicated for breastfeeding [22], [27], [28]. Among medical conditions in the infant, Galactosemia is the only disease that is a true contraindication to breastfeeding, and it is recommended that breastmilk should be substituted with artificial milk or infant formula in the cases of Galactosemia and Phenylketonuria [22], [29]. Thus it is imperative to have coordinated medical care and breastfeeding assistance from the physician or gynecologist for successful breastfeeding in the event of any maternal or infant illness.

When we assessed the practices related to BF, it was found that only 29.3% reported that they did exclusive breastfeeding (EBF). In Saudi Arabia, a study done in the Tabuk region had reported an EBF rate of 31.4% [9] and another study done in the Al-Ahsa region showed an EBF rate of 43.5% of the infant beyond six months [30]. It was found that unemployed mothers had reported continuing BF till six months (EBF) more than employed mothers. Employed mothers, especially full-time employed women may face some barriers in exclusively breastfeeding the infants during the first six months, and this could vary by type of occupation. Some of the barriers include an unsupportive environment at the workplace, lack of privacy, and inadequate time to express breast milk [31], [32]. These findings are supported by a similar study done in the Abha region, which reported that workplace-related problems are the most common barriers for EBF [33]. In Saudi Arabia, the government is providing many benefits to promote health, and maternity leave could be extended up to 3 years for working women at 25% of the employee's salary and 60 days of full salary from the day of birth of a child [34]. WHO recommends to BF child for the first six months of life to achieve optimal growth, improving cognitive development, and health of the child [35]. It is also reported that along with other health benefits, it would strengthen the bond between the mother and the child [36]. Possible limitations of this research include the cross-sectional nature of the study, which might have limited the determination of the causal relationship between knowledge level and many other independent factors. Secondly, the self-administration of questionnaires could have sometimes overestimated the practices related to breastfeeding, resulting in social desirability bias.

Conclusion

Breastfeeding knowledge, attitude, and practice improved as a result of health education; nonetheless, the percentages of women who start early, practice feeding on demand, give colostrum and intend to continue breastfeeding need to be increased. Health-care professionals have a critical role in spreading information and encouraging women to breastfeed.

The health education program should be implemented as soon as possible.

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References

- [1] R. A. Alzaheb, "A Review of the Factors Associated With the Timely Initiation of Breastfeeding and Exclusive Breastfeeding in the MiddleEast," *Clin. Med. Insights. Pediatr.*, vol. 11, pp. 1179556517748912–1179556517748912, Dec. 2017, doi: 10.1177/1179556517748912.
- [2] Dharel, D., Dhungana, R., Basnet, S. et al. Breastfeeding practices within the first six months of age in mid-western and eastern regions of Nepal: a health facility-based cross-sectional study. *BMC Pregnancy Childbirth* 20, 59 (2020). <https://doi.org/10.1186/s12884-020-2754-0>
- [3] Wang L, Van Grieken A, Van Der Velde LA, Vlasblom E, Beltman M, L'Hoir MP, Boere-Boonekamp MM, Raat H. Factors associated with early introduction of complementary feeding and consumption of non- ecommended foods among Dutch infants: the BeeBOFT study. *BMC Public Health*. 2019;19(1):388.
- [4] Noni E MacDonald, "Maternal infectious diseases, antimicrobial therapy or immunizations . Very few contraindications to breastfeeding," *Paediatr. Child Health*, vol. 11, no. 8, pp. 489–491, Oct. 2006, [Online]. Available: <https://pubmed.ncbi.nlm.nih.gov/23125529>.
- [5] R. M. Lawrence, "Circumstances when Breastfeeding I Contraindicated," *Pediatr. Clin. North Am.*, vol. 60, no. 1, pp. 295–318, 2013, doi: 10.1016/j.pcl.2012.09.012.
- [6] M. S. Al-Jassir, B. M. El-Bashir, S. K. Moizuddin, and A. A. R. Abu-Nayan, "3. Infant feeding in Saudi Arabia: mothers' attitudes and practices ٢٠٠٦
- [7] L. England et al., "Breastfeeding practices in a cohort of inner-city women: The role of contraindications," *BMC Public Health*, vol. 3, pp. 1–9, 2003, doi: 10.1186/1471-2458-3-28.
- [8] J. Upadhye, M. Mandlik, A. Upadhye, S. Marathe, A. Matte, and J. Upadhye, "Knowledge, attitudes and breast-feeding practices of postnatal mothers in Central India," *Int. J. Reprod. Contraception, Obstet. Gynecol.*, Aug. 2018, doi: 10.18203/2320-1770.ijrcog20183426.
- [9] D. Ambike, A. Ambike, S. Rajee, and S. Chincholikar, "Knowledge, awareness and breast-feeding practices of postnatal mothers in a rural teaching hospital: a cross sectional survey," *Int. J. Reprod. Contraception. Obstet. Gynecol.*, vol. 6, p. 5429, Nov. 2017, doi: 10.18203/2320-1770.ijrcog20175255
- [10] D. Alkazemi and R. Jackson, "Breastfeeding Exposure is Associated with Better Knowledge of and Attitudes toward Breastfeeding in Kuwaiti Women," Nov. 2019, doi: 10.1136/bmjnp-2019-000027.
- [11] S. A. Mande, S. S. Shiradkar, and G. N. Bapat, "A Study of Factors affecting the Knowledge and Awareness about Effective Breastfeeding," *MGM J. Med. Sci.*, vol. 5, no. 2, pp. 76–80, 2018, doi:10.5005/jp-journals-10036-1188.
- [12] World Health Organization. Global nutrition targets 2025: Policy brief series. From: www.who.int/nutrition/publications/globaltargets2025_policybrief_overview/en. Accessed 14 May 2021
- [13] Al-Nuaimi N, Katende G, Arulappan J. Breastfeeding Trends and Determinants: Implications and recommendations for Gulf Cooperation Council countries. *Sultan Qaboos Univ Med J*. 2017;17(2):e155-e161.
- [14] Walters DD, Phan LTH, Mathisen R. The cost of not breastfeeding: global results from a new tool. *Health Policy Plan*. 2019;34(6):407-417.
- [15] Al Ketbi MI, Al Noman S, Al Ali A, Darwish E, Al Fahim M, Rajah J. Knowledge, attitudes, and practices of breastfeeding among women visiting primary healthcare clinics on the island of Abu Dhabi, United Arab Emirates. *Int Breastfeed J*. 2018;13:26.
- [16] World Health Organization/UNICEF. Ten steps to successful breastfeeding. <http://www.unicef.org/newsline/tensteps.htm>. Accessed 14 May 2021.
- [17] Eastern Mediterranean Regional Office of WHO (EMRO) Breastfeeding in the EMRO region. 2012. From: <http://www.emro.who.int/health-topics/breastfeeding>. Accessed 14 May 2021.
- [18] Meenakshi G, Marriyah H, Deeksha K. Infant and young child feeding (IYCF) practices in Udupidistrict, Karnataka. *J Nut Res*. 2015;3(1):38–44.
- [19] Joyce N, Joshua KM. Barriers to infant and child-feeding practices: a qualitative study of primary caregivers in Rural Uganda. *J Health Popul Nutr*. 2015;33(1):106–116.
- [20] Alzaheb RA. Factors Influencing Exclusive Breastfeeding in Tabuk, Saudi Arabia. *Clin Med Insights Pediatr*. 2017;11:1179556517698136
- [21] Dubois L, Girard M. Social determinants of initiation, duration and exclusivity of breastfeeding at the population level. The results of a longitudinal study of child development in Quebec (ELDEQ 1998–2002) *Can J Public Health*. 2003;94:300–5
- [22] Lawrence RM. Circumstances when breastfeeding is contraindicated. *Pediatr Clin North Am*. 2013;60(1):295-318.
- [23] AAP Section on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics* 2012;129:e827–41. From : <http://pediatrics.aappublications.org/content/129/3/e827.full.html>. Accessed May 15, 2021.
- [24] World Health Organization. Guidelines on HIV and infant feeding. In: *Maternal, newborn, child and adolescent health*. 2010 From: http://www.who.int/maternal_child_adolescent/documents/9789241599535/en/. Accessed May 15, 2021.
- [25] Lawrence RM. Transmission of Infectious Diseases Through Breast Milk and Breastfeeding. *Breastfeeding*. 2011;406-473.
- [26] Lohman-Payne B, Slyker J, Rowland-Jones SL. Immune-based approaches to the prevention of mother-to-child transmission of HIV-1: active and passive immunization. *Clin Perinatol*. 2010;37(4):787-ix.
- [27] Laris-González A, Bernal-Serrano D, Jarde A, Kampmann B. Safety of Administering Live Vaccines During Pregnancy: A Systematic Review and Meta-Analysis of Pregnancy Outcomes. *Vaccines (Basel)*. 2020;8(1):124.

-]28[Kuhn S, Twele-Montecinos L, MacDonald J, Webster P, Law B. Case report: probable transmission of vaccine strain of yellow fever virus to an infant via breast milk. *CMAJ*. 2011;183(4):E243-E245.
-]29[. Schulpis K, Iakovou KK. Replacement of breastfeeding with medical food for the treatment of galactosemia and phenylketonuria: maternal stress. *J Pediatr Endocrinol Metab*. 2019;32(7):791-795.
-]30[. Al-Katufi BA, Al-Shikh MH, Al-Hamad RF, Al-Hajri A, Al-Hejji A. Barriers in continuing exclusive breastfeeding among working mothers in primary health care in the ministry of health in Al-Ahsa region, Saudi Arabia. *J Family Med Prim Care* 2020;9:957-72
-]31[. Ortiz J, McGilligan K, Kelly P. Duration of breast milk expression among working mothers enrolled in an employer-sponsored lactation program. *PediatrNurs*. 2004;30(2):111–119
-]32[. Raju TNK. Continued barriers for breast-feeding in public and the workplace. *J Pediatr*. 2006;148(5):677–679
-]33[Al-Binali AM. Breastfeeding knowledge, attitude and practice among school teachers in Abha female educational district, southwestern Saudi Arabia. *IntBreastfeed J*. 2012;7:10.
-]34[. Ministry of Civil Service. Vacation rules and regulation (article 22). Ministry of Civil Service, Saudi Arabia. From: <http://www.mcs.gov.sa/InformationCenter/News/MinistryNews/Pages/default.aspx>. Accessed 15 May 2021.
-]35[. WHO. Exclusive breastfeeding for six months best for babies everywhere'. World Health Organization; 2011. From: <http://www.who.int>. Accessed 15 May 2021..
-]36[. Liu J, Leung P, Yang A. Breastfeeding and active bonding protects against children's internalizing behavior problems. *Nutrients*. 2013;6(1):76-89.