

Providing education from adolescence to promote exclusive breastfeeding: a retrospective study

Luh Mertasari

Universitas Pendidikan Ganesha

Luh Seri Ani (✉ seriani@unud.ac.id)

Udayana University

Luh Nyoman Sumiati

Udayana University

Ni Kadek Ayu dwi Utami Ds

Triatma Mulia University

Research Article

Keywords: Adolescent, Pregnancy, Female, Breastfeeding, Health Education

Posted Date: October 27th, 2023

DOI: <https://doi.org/10.21203/rs.3.rs-3481359/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Although providing education regarding exclusive breastfeeding can increase the exclusive breastfeeding coverage in infants aged 0-6 months, studies investigating this association are limited. This study aimed to prove that providing education from adolescence could increase exclusive breastfeeding in infants aged 0-6 months. This retrospective study included mothers of toddlers aged 6-24 months. In total, 144 mothers from five regions were selected in two stages. First, primary healthcare centers were selected using purposive sampling, and then mothers of toddlers were selected using a simple random sampling method. Data was collected via interviews. Exclusive breastfeeding data were based on the history of breastfeeding of the mothers when the babies were 0-6 months old. A logistic progression test was performed to determine the role of providing education from adolescence and other variables in increasing the coverage of exclusive breastfeeding. The proportion of exclusive breastfeeding was 47.2%. Mothers who received education as adolescents and who underwent cesarean section showed a low tendency for exclusive breastfeeding ($p=0.004$ and $p=0.036$, respectively). Meanwhile, mothers receiving breastfeeding education during pregnancy were 5.2 times more likely to exclusively breastfeed than those not receiving it ($p=0.001$). Mothers who received family support were 6.6 times more likely to exclusively breastfeed than those who did not receive it ($p=0.002$). The provision of education from adolescence has not been proven to increase the coverage of exclusive breastfeeding in 0-6-month-old infants. However, this study suggests providing education from adolescence and support from the family and social environment to perform exclusive breastfeeding successfully.

1 Introduction

Exclusive breastfeeding refers to a source of food obtained only from breast milk, without the consumption of any other food or liquids.(1) The World Health Organization (WHO) recommends exclusively breastfeeding babies from 1 h after birth to the first 6 months of life.(2) Breastfeeding has many health benefits for both mothers and infants.(3,4) Optimal breastfeeding can save the lives of more than 820,000 children every year under the age of 5.(1,5) Breastfeeding was found to reduce the risk of allergic rhinitis and gastrointestinal infections.(6–8) Additionally, mothers who breastfed exclusively reported rapid post-partum weight loss, delayed return of the menstrual cycle, and increased hormone production.(7)

Breastfeeding education involves providing information about exclusive breastfeeding to mothers and their families to promote and encourage mothers to breastfeed their babies.(9) Educating mothers regarding exclusive breastfeeding can help them make decisions when facing the challenges of the commercial milk formula products market.(10) It is known that the quality of commercial formula products cannot be compared with that of breast milk. Breast milk has several unique properties and long-term health benefits.

Maternal educational factors contribute to reduced breastfeeding.(11–14) A study found that factors associated with exclusive breastfeeding included maternal occupation, family income, and support for

exclusive breastfeeding from family and friends.(15) Exclusive breastfeeding is more common in housewives than working mothers.(16) This finding was confirmed by a study conducted on health workers in Ghana's Upper Eastern region, which found that health workers have poor breastfeeding behavior due to the mother's inability to exclusively breastfeed.(10,17)

Although exclusive breastfeeding education efforts have long been conducted, the scope of exclusive breastfeeding has not yet reached its target. The WHO reports that approximately 44% of babies aged 0-6 months were exclusively breastfed between 2015 and 2020 worldwide. This proportion is below the WHO target of increasing exclusive breastfeeding during the first 6 months to at least 50% by 2025.(1) The rate of exclusive breastfeeding varies in different countries. The average prevalence of exclusive breastfeeding in low- and middle-income countries from 2010 to 2018 was 45.7%. (18) The prevalence of exclusive breastfeeding was 20.47% in Burao district, Somaliland,(19) 38.1% in rural Sichuan, China,(20) 53% in Iran, (21) and 60.42% in Ethiopia.(22) In contrast, an increase in the rate of exclusive breastfeeding by 1.29 points each year has been reported in high-income countries.(23)

The proportion of exclusive breastfeeding for infants aged 0-6 months in Indonesia has reached the target of 52.3%.(24) However, the coverage rate of exclusive breastfeeding in several regions of Indonesia still varies. Buleleng Regency is one of the regions in Indonesia showing variations in the rate of exclusive breastfeeding. The coverage of toddlers receiving exclusive breastfeeding in the Buleleng district fluctuated from 69% to 78.9% from 2016 to 2020, respectively.(25) This coverage rate of exclusive breastfeeding was relatively lower than that reported overall for Bali and Indonesia (64.9-89.2% and 11.9-86.7%, respectively).

Providing education during pregnancy and childbirth did not help to achieve the target set for exclusive breastfeeding.(26,27) This could be because the knowledge imparted did not forge a strong attitude in the mothers to provide exclusive breastfeeding.(28) Lack of knowledge can hinder the readiness of mothers to breastfeed their babies. Usually, mothers are not ready to breastfeed because of a lack of milk production and less prominent nipple anatomy. Breastfeeding barriers increase under the influence of culture factors. Some countries have implemented a culture that renders mothers powerless to make decisions about caring for their babies, including those regarding breastfeeding.(29) Notably, education can be an effective measure to empower women to exclusively breastfeed their babies.(29)

Breastfeeding education during adolescence makes it possible to overcome the obstacles in exclusive breastfeeding. Usually, the decision to breastfeed exclusively is already made before conception, namely during adolescence.(30) Providing breastfeeding education to adolescents in schools reportedly improves the knowledge, attitude, and intentions regarding breastfeeding. The early provision of exclusive breastfeeding knowledge provides an opportunity for adolescents to understand the various obstacles. Moreover, physical and social problems are not only identified early but also managed in time before breastfeeding.(30,31)

Providing education during adolescence may provide support to breastfeeding mothers. The WHO reported that every year, 21 million adolescents aged 15-19 years become pregnant in low-income

countries, and approximately 12 million have had babies.(32) Adolescent pregnancy causes adolescents to become mothers without the knowledge and readiness required for exclusively breastfeeding their babies. Moreover, providing education during preconception, including the adolescent period, significantly reduces morbidity and mortality in both mothers and babies.(33)

Therefore, this study aimed to analyze the effectiveness of providing education from adolescence to increase the coverage of exclusive breastfeeding in infants aged 0-6 months.

2 Methods

Design and sampling method

This retrospective study measured exclusive breastfeeding based on the history of breastfeeding in babies aged 0-6 months. The participants were mothers of babies aged 6-24 months. Maternal participants were selected based on the limits of exclusive breastfeeding and breastfeeding. Exclusive breastfeeding is defined as giving only breast milk without additional food/liquid to infants from birth to 6 months of age and continuing breastfeeding with the introduction of appropriate complementary foods until the infant is 24 months old.

This study included mothers living in the areas of the selected primary healthcare centers (PHCs) and willing to be interviewed. In total, 144 mothers from five regions participated in the study. The sample selection was performed in two stages. In the first stage, the PHCs were chosen using a purposive method based on the highest and lowest coverage of exclusive breastfeeding. Sukasada I, Sukasada II, and Buleleng I were the PHCs selected. The second stage involved selecting mothers with babies aged 6-24 months using a simple sampling method. Each selected PHC had a sample quota of 48 mothers. Furthermore, the objectives, benefits, and procedures of the study were explained to the mothers who fulfilled the inclusion criteria. Mothers who are willing to participate are asked to provide written informed consent. Informed consent has been obtained from all mothers of infants involved in this study.

Data collection

Data collection was conducted in May and June 2023 in Buleleng Regency, Bali, Indonesia. Data was collected at each respondent's home via interviews. The interview was conducted for approximately 30 min for each participant. The questionnaire used was developed by the researchers themselves and was subjected to validity and reliability tests. The validity test using the product moment test revealed a calculated r-value of 0.413 and a table r-value of 0.195. The reliability test revealed a Cronbach alpha value >0.6 (0.614).

The data collected included information regarding the characteristics of the mothers and babies, exclusive breastfeeding, history of receiving information about exclusive breastfeeding, sources of information regarding exclusive breastfeeding, knowledge of exclusive breastfeeding, attitude toward exclusive breastfeeding, and support from health workers, husbands, family, and friends. Data on

exclusive breastfeeding were collected via interviews. The babies were considered exclusively breastfed if they were only given breast milk without additional food/liquid at 0-6 months of age.

Data analysis

The research data were subjected to univariate, bivariate, and multivariate analyses. Univariate analysis was performed to determine the proportion of each research variable. Variate tests were conducted to analyze the differences in the proportion of exclusive breastfeeding based on independent variables. Bivariate analysis was performed using the chi-square test, with a significance level of 95%. Multivariate logistic regression analysis was conducted to determine the variables influencing exclusive breastfeeding. The multivariate model only included variables with p-values <0.25 based on the chi-square test.

3 Results

Table 1 describes the characteristics of the mothers and infants in this study. Most mothers were aged 20-30 years (89.6%), had a low education level (42.4%), were unemployed (51.4%), had two or more surviving children (77.8%), underwent normal delivery (70.1%), and had babies with birth weight ≥ 2500 g (97.2%). Moreover, most of them had good knowledge (56.3%) and a positive attitude (54.2%) regarding exclusive breastfeeding and had support from their husbands (53.5%).

Table 1. Characteristics of the mothers in the study

Characteristics	N=144	%
Mother's age (years)		
<20	1	0.7
20-35	129	89.6
>35	14	9.7
Education level		
Low	61	42.4
Middle	41	28.5
High	42	29.2
Employed		
No	74	51.4
Yes	70	48.6
Number of surviving children		
2	112	77.8
2	32	22.2
Delivery method		
Normal	101	70.1
Cesarean	43	29.9
Baby birth weight		
<2500 g	4	2.8
2500 g	140	97.2
Mother's knowledge regarding the benefits of exclusive breastfeeding		
Good	81	56.3
Enough	40	27.8
Less	23	16.0
Mother's attitude regarding exclusive breastfeeding		
Positive	78	54.2
Neutral	42	29.2
Negative	24	16.7

Support in providing exclusive breastfeeding		
Health workers	61	42.4
Husband	77	53.5
Family	61	42.4
Friends	61	42.4

Table 2 shows that 47.2% of mothers in this study performed exclusive breastfeeding. Almost 100% of mothers received education on breastfeeding, while only a small percentage received education as adolescents (13.2%). The most common source of information was from health workers (93.1%).

Table 2. Education, sources of information, knowledge, attitude, and sources of support for exclusive breastfeeding

Variables	n	%
Exclusive breastfeeding		
Yes	68	47.2
No	76	52.8
Received breastfeeding education		
Yes	144	100%
Not	0	0%
Received education about exclusive breastfeeding		
Since adolescence (n=144)	19	13.2
During pregnancy (n=144)	101	70.1
Sources of information about exclusive breastfeeding		
Health workers (n=144)	134	93.1
Printed media (n=144)	60	41.7
Internet (n=144)	49	34

Table 3 shows that exclusive breastfeeding is found in only one mother aged <20 years. Among exclusively breastfed mothers, 32.3% had a high level of education, 53.0% were unemployed, 17.7% had two or more surviving children, 83.8% had vaginal births, and 100% had babies with a birth weight of

≥2500 g. Notably, most exclusive breastfeeding mothers did not receive exclusive breastfeeding information from adolescents (94.1%). However, 92.6% of exclusively breastfeeding mothers received information from health workers, 69.1% had good knowledge, and 67.6% had a positive attitude towards exclusive breastfeeding. In addition, 54.4%, 64.7%, 60.3%, and 55.9% of them received support from health workers, husbands, family, and friends, respectively. This finding shows that exclusive breastfeeding is influenced by education received since adolescence, education received during pregnancy, information received from print media, delivery methods, knowledge, and attitudes of mothers regarding breastfeeding, and support from health workers, husbands, family, and friends ($p < 0.05$).

Table 3. History and resources of breastfeeding education and characteristics of mothers

Variables	Exclusive breastfeeding				p-value
	No (n=76)		Yes (n=68)		
	n	%	n	%	
Have been educated when adolescence					
Yes	15	19.7	4	5.9	0.014
No	61	80.3	64	94.1	
Have been educated during pregnancy					
Yes	44	57.9	57	88.8	0.001
No	32	42.1	11	11.2	
Resources from health workers					
Yes	71	93.4	63	92.6	0.855
No	5	6.6	5	7.4	
Resources from print media					
Yes	38	50.0	22	32.3	0.032
No	38	50.0	46	67.7	
Resources from the internet					
Yes	28	36.8	21	30.9	0.451
No	48	63.2	47	69.1	
Age of the mother (years)					
<20	0	0	1	1.3	0.201
20-35	66	86.8	63	92.6	
>35	10	13.2	4	6.1	
Education level					
High	20	26.3	22	32.3	0.714
Middle	23	30.3	18	26.5	
Low	33	43.4	28	41.2	
Occupation					
Employed	38	50.0	32	47.0	0.724
Unemployed	38	50.0	36	53.0	

Number of surviving children					
2	56	73.7	56	82.3	0.212
2	20	26,3	12	17,7	
Delivery method					
Normal	44	57.9	57	83.8	0.001
Cesarean	32	42.1	11	16.2	
Baby birth weight					
<2500 g	4	5.3	0	0.0	0.055
2500 g	72	94.7	68	100	
Knowledge					
Good	34	44.7	47	69,1	0.013
Enough	27	35.5	13	19.1	
Less	15	19.8	8	11.8	
Attitude					
Positive	2	2.6	46	67.6	0.001
Neutral	24	31.6	18	26.3	
Negative	20	65.8	4	6.1	
Health worker support					
Good	24	31.6	37	54.4	0.009
Enough	14	18.4	13	19.1	
Less	38	50.0	18	26.5	
Husband support					
Good	33	43.4	44	64.7	0.029
Enough	29	38.1	14	20.6	
Less	14	18.5	10	14.7	
Family support					
Good	0	0	41	60.3	0.000
Enough	36	47.4	21	30.9	
Less	20	52.6	6	8.8	

Friend support					
Good	29	38.2	38	55.9	0.032
Enough	18	23.7	17	25.0	
Less	29	38.1	13	19.1	

Table 4 shows that mothers who received education as adolescents and who underwent cesarean section showed a low tendency for exclusive breastfeeding (adjusted odds ratio [AOR]=0.136; 95% confidence interval [CI]=0.035-0.526; p=0.004 and AOR=0.372; 95%CI=0.146-0.950; p=0.036, respectively). Mothers who received education during pregnancy were 5.2 times more likely to exclusively breastfeed their babies than those who did not receive education during pregnancy (AOR=5.201; 95%CI=2.054-13.168; p=0.001). Mothers who received good family support were 6.6 times more likely to exclusively breastfeed their babies than those who did not receive family support (AOR=6.626; 95%CI= 2.030-21.628; p=0.002).

Table 4. Results of logistic regression test for exclusive breastfeeding

Variables	Exclusive breastfeeding		
	AOR	95%CI	p-value
Received education since adolescence			
No	(Ref)		
Yes	0.136	0.035-0.526	0.004
Received education during pregnancy			
No	(Ref)		
Yes	5.201	2.054-13.168	0.001
Family support			
Less	(Ref)		
Enough	2.394	0.716-8.004	0.156
Good	6.626	2.030-21.628	0.002
Delivery method			
Normal	(Ref)		
Cesarean	0.372	0.146-0.950	0.039

(AOR= adjusted odds ratio; CI= confidence interval; Ref= reference)

4 Discussion

Exclusive breastfeeding was observed in 47.2% of mothers in this study. This exclusive breastfeeding rate is relatively higher than that reported for infants under 6 months in rural China and Malawi (38.1% and 35.9%, respectively).(20,33) The Institute of Child Mother Health in Dhaka, Bangladesh, reported that the proportion of exclusive breastfeeding was 50.0%.(34) However, several other studies reported a relatively high proportion of exclusive breastfeeding, ranging from 63% to 95.7%.(12,14,35–37)

This variation in the proportion of exclusive breastfeeding may be due to differences in research participants and the methods of determining the prevalence of exclusive breastfeeding. The participants in this study were breastfeeding mothers of children aged 6-24 months. A study conducted in rural Malawi included school-aged children, (33) while one in Colombia assessed exclusive breastfeeding in infants aged <6 months. (36) Meanwhile, a study conducted in China assessed exclusive breastfeeding in infants aged 4 months.(38) A study in Zanzibar assessed exclusive breastfeeding in postpartum mothers visiting the obstetrics and gynecology departments of two main hospitals.(12)

Considering the data sources used, the exclusive breastfeeding data in this study were obtained via interviews using the 24-h recall method. Some previous studies used demographic surveillance secondary data.(33,35) The quality of data collected using the 24-h recall method depended on the participant's memory of the exclusive breastfeeding behavior experienced. Nevertheless, this method showed good validity. The maternal memory sensitivity in the last 12 months was 98.3%, specificity was 70.0%, and accuracy was 77.9%.(39) Thus, information regarding the proportion of exclusive breastfeeding in this study can be used as basic data for evaluating exclusive breastfeeding programs.

Receiving education about exclusive breastfeeding as an adolescent was found to reduce the tendency of exclusive breastfeeding. Mothers who have been informed since adolescence tend not to breastfeed exclusively. This could be due to the long interval between education and breastfeeding, which reduces the knowledge possessed. Other factors also influence exclusive breastfeeding, such as maternal employment status, delivery method, and support for exclusive breastfeeding from family and friends. (15) Non-working mothers have more opportunities to provide exclusive breastfeeding than working mothers.(16) Mothers who are health workers tend to have poor breastfeeding behavior because of their inability to exclusively breastfeed.(10,17) Furthermore, the inability to exclusively breastfeed could be attributed to inhibiting factors, such as swollen breasts, pain in the nipples, and insufficient milk production.(34,40)

Mothers delivering via cesarean section showed a reduced tendency for exclusive breastfeeding. Post-cesarean section mothers experience two times more obstacles in exclusive breastfeeding than post-vaginal delivery mothers.(13,41–43) The proportion of breastfeeding initiation in post-cesarean section mothers ranges from 4.8% to 40.1%.(44,45) Generally, newborns are kept separate from the mothers after cesarean section; hence, early initiation of breastfeeding is delayed.(43) To prevent the negative consequences of late breastfeeding, efforts to promote and strengthen the capacity of healthcare

providers are needed to increase early breastfeeding initiation, especially for infants delivered via cesarean section.(46)

The factors influencing the success of exclusive breastfeeding are support for mothers from health workers, family, and friends. This study found that mothers of toddlers who received good family support tended to be 6.6 times more likely to exclusively breastfeed than those who did not receive enough family support. Family support was found to be associated with exclusive breastfeeding among young mothers in Thailand.(47) The mother's family and friends supporting breastfeeding as well as the external environment supporting breastfeeding when the mother resumes work activities outside the home are associated with exclusive breastfeeding.(15) This finding shows that breastfeeding is not only the mother's responsibility but also requires support from the social environment.(36)

Therefore, efforts to increase knowledge about exclusive breastfeeding need to be pursued from adolescence.(48)(49) The intention of toddler mothers to exclusively breastfeed requires support from their family and the environment. Young mothers find it difficult to achieve breastfeeding targets. Therefore, they require support, promotional activities, and health education based on individuals and communities.(50–53) Therefore, exclusive breastfeeding education should be introduced during adolescence.

This study is limited to only one district; therefore, its results may be less representative. However, the research area was chosen based on variations in the coverage of exclusive breastfeeding.

5 Conclusion

Providing education during adolescence did not increase the coverage of exclusive breastfeeding. Nevertheless, this study suggests providing exclusive breastfeeding education from adolescence and increasing support from the family and social environment for mothers to ensure exclusive breastfeeding.

Abbreviations

WHO: World Health Organization

PHCs: Primary Healthcare Center

Declarations

Acknowledgment

The authors would like to thank the Head of the Primary Health Center Buleleng District, Bali Province, who allowed conduct research in their area of work.

Author contributions

LM and LSA play a role in designing research studies, writing drafts, reviewing, and editing manuscripts. LNS and NKADUD play a role in analyzing research data, writing drafts, reviewing, and editing manuscripts. All authors have read and approved the final manuscript.

Funding

No funding was received for this study.

Data Availability

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

Competing interests

The authors declare no competing interests.

Ethics approval

This study received ethical approval from the Research Ethics Commission of the Faculty of Medicine, Udayana University (No: I 393AJN I4.2.2.VII.I 4/I-T /2023). This research was conducted in accordance with ethical provisions and research guidelines applicable in the research area. Mothers who are willing to participate are asked to provide written informed consent. Informed consent has been obtained from all mothers of infants.

Consent for publication

This is not applicable.

References

1. WHO. Breastfeeding [Internet]. 2021. Available from: https://www.who.int/health-topics/breastfeeding#tab=tab_1
2. WHO. Infant and young child feeding [Internet]. 2023. Available from: <https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding>
3. Mashayekh-amiri S, Hosseinzadeh M, Jafarabadi MA, Soltani S. Examining psychometric properties of the Iranian version of exclusive breastfeeding social support scale (EBFSS). 2023;1–11.
4. Oberfichtner K, Oppelt P, Fritz D, Hrauda K, Fritz C, Schildberger B, et al. Breastfeeding in primiparous women – expectations and reality : a prospective questionnaire survey. BMC Pregnancy Childbirth [Internet]. 2023;1–9. Available from: <https://doi.org/10.1186/s12884-023-05971-1>
5. Pillay L, Moodley D, Emel LM, Nkwanyana NM, Naidoo K. Growth patterns and clinical outcomes in association with breastfeeding duration in HIV exposed and unexposed infants: a cohort study in KwaZulu Natal, South Africa. BMC Pediatr. 2021;21(1):1–9.

6. Hoang MP, Samuthpongton J, Seresirikachorn K, Snidvongs K. Prolonged breastfeeding and protective effects against the development of allergic rhinitis: A systematic review and meta-analysis. *Rhinology*. 2022;60(2):82–91.
7. WHO. Exclusive breastfeeding for six months best for babies everywhere [Internet]. 2023. Available from: <https://www.who.int/news/item/15-01-2011-exclusive-breastfeeding-for-six-months-best-for-babies-everywhere>
8. Fabiola Vincent Moshi, Esther E. Akyoo and SAS. Prevalence and Predictor of Exclusive Breastfeeding among Mothers of 0 to 6 months Infants from Pastoralists and Hunters' Community in Tanzania; A Community Based Cross-Sectional Study. *East Afr Heal Res J*. 2021;5(1):82–90.
9. Espín ID, Cáceres ÁL, Álava A, Ayala J, Figueroa K, Loo V, et al. skin contact and other strong determinants of exclusive breastfeeding in an urban population : a prospective study. 2021;1–8.
10. Pérez-Escamilla R, Tomori C, Hernández-Cordero S, Baker P, Barros AJD, Bégin F, et al. Breastfeeding: crucially important, but increasingly challenged in a market-driven world. *Lancet* [Internet]. 2023 Feb;401(10375):472–85. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0140673622019328>
11. Artzi-Medvedik R, Mariani I, Valente EP, Lazzerini M, Chertok IA. Factors associated with exclusive breastfeeding in Israel during the COVID-19 pandemic: a subset of the IMAGiNE EURO cross-sectional study. *Int Breastfeed J* [Internet]. 2023;18(1):1–9. Available from: <https://doi.org/10.1186/s13006-023-00568-y>
12. Hadi F, Eftkhar H, Djazayery A, Mazloomzadeh S. Exclusive breast feeding and its determinants in infants born in Zanjan hospitals: A longitudinal study. *J Compr Pediatr*. 2021;12(3).
13. Ragusa R, Marranzano M, La Rosa VL, Giorgianni G, Commodari E, Quattrocchi R, et al. Factors influencing uptake of breastfeeding: The role of early promotion in the maternity hospital. *Int J Environ Res Public Health*. 2021;18(9).
14. Sharma M, Anand A, Goswami I, Pradhan MR. Factors associated with delayed initiation and non-exclusive breastfeeding among children in India: evidence from national family health survey 2019-21. *Int Breastfeed J*. 2023;18(1):1–13.
15. Yang Z, Ding Y, Song S, Zhang Y, Li A, Su M, et al. Factors Affecting the Breastfeeding Duration of Infants and Young Children in China: A Cross-Sectional Study. *Nutrients*. 2023;15(6):1–19.
16. Ngao OD, Mboineki JF. Comparative study of exclusive breastfeeding practice among employed mothers and housewives in Tanzania. *J Heal Popul Nutr* [Internet]. 2023 Jul 26;42(1):72. Available from: <https://jhpn.biomedcentral.com/articles/10.1186/s41043-023-00407-0>
17. Kubuga CK, Tindana J. Breastfeeding environment and experiences at the workplace among health workers in the Upper East Region of Ghana. *Int Breastfeed J*. 2023;18(1):1–13.
18. Wu H, Zhao M, Magnussen CG, Xi B. EClinicalMedicine Global prevalence of WHO infant feeding practices in 57 LMICs in 2010 À 2018 and time trends since 2000 for 44 LMICs. 2021;37:1–9.
19. Jama A, Gebreyesus H, Wubayehu T, Gebregyorgis T, Teweldemedhin M. Exclusive breastfeeding for the first six months of life and its associated factors among children age 6-24 months in Burao

- district , Somaliland. 2020;7:1–8.
20. Weber AM, Guo Y, Zhang E, Gruber S, Medina A, Zhou H, et al. Associations of in-hospital postpartum feeding experiences with exclusive breastfeeding practices among infants in rural Sichuan, China. *Int Breastfeed J* [Internet]. 2023;18(1):34. Available from: <https://doi.org/10.1186/s13006-023-00567-z>
 21. Behzadifar M, Saki M, Behzadifar M, Mardani M, Yari F. Prevalence of exclusive breastfeeding practice in the first six months of life and its determinants in Iran : a systematic review and meta-analysis. 2019;1–10.
 22. Wake GE. Prevalence of exclusive breastfeeding practice and its association with maternal employment in Ethiopia : a systematic review and meta-analysis. 2021;1–14.
 23. Neves PAR, Vaz JS, Maia FS, Baker P, Gatica-domínguez G, Piwoz E, et al. Articles Rates and time trends in the consumption of breastmilk , formula , and animal milk by children younger than 2 years from 2000 to 2019 : analysis of 113 countries. 2021;619–30.
 24. Gayatri M. Exclusive Breastfeeding Practice in Indonesia : A Population-Based Study. 2021;395–402.
 25. Bali DKP. Rancangan akhir perubahan Renstra Semesta Berencana Dinas Kesehatan Provinsi Bali tahun 2018-2023. 2023;1. Available from: https://e-renggar.kemkes.go.id/file_performance/1-220006-2tahunan-762.pdf
 26. Aboul-Enein BH, Dodge E, Benajiba N, Mabry RM. Interventions and Programs to Promote Breastfeeding in Arabic-Speaking Countries: A Scoping Review. *Matern Child Health J* [Internet]. 2023;27(5):774–94. Available from: <https://doi.org/10.1007/s10995-023-03595-7>
 27. Pratiwi DN, Ernawaty. Implementation of an Exclusive Breastfeeding Policy in Wonogiri Regency. *Indones J Public Heal*. 2023;18(1):21–33.
 28. Axelin A, Kolari T. Sexual & Reproductive Healthcare Exclusive breastfeeding , breastfeeding problems , and maternal breastfeeding attitudes before and after the baby-friendly hospital initiative : A quasi-experimental study “ kel a. 2023;35(November 2022).
 29. Hadisuyatmana S, Mishbahatul E, Has M, Katikana S, Efendi F, Astutik E, et al. Women ’ s empowerment and determinants of early initiation of breastfeeding : A scoping review. *J Pediatr Nurs* [Internet]. 2020; Available from: <https://doi.org/10.1016/j.pedn.2020.08.004>
 30. Reyes C, Barakat-haddad C, Barber W, Abbass-dick J. Investigating the effectiveness of school-based breastfeeding education on breastfeeding knowledge , attitudes and intentions of adolescent females. *Midwifery* [Internet]. 2019;70:64–70. Available from: <https://doi.org/10.1016/j.midw.2018.12.010>
 31. Čatipović M, Marković M, Grgurić J. EFFECTS OF A BREASTFEEDING EDUCATIONAL INTERVENTION ON SECONDARY SCHOOL STUDENTS AFTER 6 MONTHS. 2021;569–78.
 32. WHO. Adolescent pregnancy [Internet]. 2023. Available from: <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>
 33. Mohammed S, Webb EL, Calvert C, Glynn JR, Sunny BS, Crampin AC, et al. Effects of exclusive breastfeeding on educational attainment and longitudinal trajectories of grade progression among

- children in a 13-year follow-up study in Malawi. *Sci Rep* [Internet]. 2023;13(1):11413. Available from: <https://doi.org/10.1038/s41598-023-38455-5>
34. Tasnim S, Roy SK, Jahan K, Nazmeen S, Debnath SC, Islam ABMM. Difficulties in breastfeeding: Easy solution by oketani breast massage. *Bangladesh Med Res Counc Bull*. 2019;45(3):149–54.
 35. Darboe ML, Jeyakumar A, Mansour SMA, Valawalkar S. Determinants of early initiation of breastfeeding in The Gambia: a population-based study using the 2019–2020 demographic and health survey data. *Int Breastfeed J*. 2023;18(1):1–8.
 36. Finnie S, Pérez-Escamilla R, Buccini G. Determinants of early breastfeeding initiation and exclusive breastfeeding in Colombia. *Public Health Nutr*. 2020;23(3):496–505.
 37. Li L, Wan W, Zhu C. Breastfeeding after a cesarean section: A literature review. *Midwifery* [Internet]. 2021;103(July 2020):103117. Available from: <https://doi.org/10.1016/j.midw.2021.103117>
 38. Li Q, Tian J, Xu F, Binns C. Breastfeeding in china: A review of changes in the past decade. *Int J Environ Res Public Health*. 2020;17(21):1–19.
 39. Schneider BC, Cata-Preta BO, Gräf DD, Silva DLR, Santos FS, Dias MS, et al. Validation of maternal recall on exclusive breastfeeding 12 months after childbirth. *Public Health Nutr*. 2020;23(14):2494–500.
 40. Yalçın SS, Erat Nergiz M, Yalçın S. Evaluation of breastfeeding and infant feeding attitudes among syrian refugees in Turkey: observations of Syrian healthcare workers. *Int Breastfeed J*. 2023;18(1):38.
 41. Kusasira L, Mukunya D, Obakiro S, Kenedy K, Rebecca N, Ssenyonga L, et al. Prevalence and predictors of delayed initiation of breastfeeding among postnatal women at a tertiary hospital in Eastern Uganda: a cross-sectional study. *Arch Public Heal*. 2023;81(1):1–8.
 42. Li EM, Xiao LX, Xu Z, Mo ZS, Li JQ, Mei YY, et al. Factors associated with non-compliance with breastfeeding recommendation: a retrospective survey in hepatitis B virus-infected mothers who had taken Nucleos(t)ide analogs during pregnancy. *BMC Pregnancy Childbirth*. 2021;21(1):1–10.
 43. Gedefaw G, Goedert MH, Abebe E, Demis A. Effect of cesarean section on initiation of breast feeding: Findings from 2016 Ethiopian Demographic and Health Survey. Tun HM, editor. *PLoS One* [Internet]. 2020 Dec 18;15(12):e0244229. Available from: <https://dx.plos.org/10.1371/journal.pone.0244229>
 44. Taha Z, Ali Hassan A, Wikkeling-Scott L, Papandreou D. Prevalence and Associated Factors of Caesarean Section and its Impact on Early Initiation of Breastfeeding in Abu Dhabi, United Arab Emirates. *Nutrients* [Internet]. 2019 Nov 10;11(11):2723. Available from: <https://www.mdpi.com/2072-6643/11/11/2723>
 45. Getaneh T, Negesse A, Dessie G, Desta M, Temesgen H, Getu T, et al. Impact of cesarean section on timely initiation of breastfeeding in Ethiopia: a systematic review and meta-analysis. *Int Breastfeed J* [Internet]. 2021 Dec 5;16(1):51. Available from: <https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/s13006-021-00399-9>
 46. Ayesha U, Mamun ASMA, Sayem MA, Hossain MG. Factors associated with duration of breastfeeding in Bangladesh: evidence from Bangladesh demographic and health survey 2014. *BMC*

- Public Health. 2021;21(1):1–13.
47. Thaithae S, Yimyam S, Polprasarn P. Prevalence and Predictive Factors for Exclusive Breastfeeding at Six Months among Thai Adolescent Mothers. *Children*. 2023;10(4):1–12.
 48. Salarvand S, Ghazvineh S, Mousivand F, Ahmadi Gharaei H, Bitaraf S. Health literacy and its related factors as predictors for the breastfeeding self-efficacy in a western province in Iran. *BMC Public Health* [Internet]. 2023;23(1):1–9. Available from: <https://doi.org/10.1186/s12889-023-15522-0>
 49. Ghotbizadeh F, Panahi Z, Manshadi AT, Soltani S, Akbari R, Parsapur M. Maternal Health Literacy and Pregnancy Outcomes: Does any Association Exist? *J Obstet Gynecol Cancer Res*. 2023;8(1):68–75.
 50. Dykes C, Ny P, Hauck YL, Kuliukas L, Gallagher L, Brady V, et al. Women’s perceptions of factors needed to encourage a culture of public breastfeeding: a cross-sectional study in Sweden, Ireland and Australia. *Int Breastfeed J*. 2023;18(1):1–8.
 51. Salem M, Ertz M. “Better start”: promoting breastfeeding through demarketing. *BMC Public Health*. 2023;23(1):1–13.
 52. Seyyedi N, Rahmatnezhad L, Mesgarzadeh M, Khalkhali H, Seyyedi N, Rahimi B. Effectiveness of a smartphone-based educational intervention to improve breastfeeding. *Int Breastfeed J*. 2021;16(1):1–8.
 53. Yu M, Xu M, Liu Z, Ying Y, Weng Q, Subhi NO. Nurse Education in Practice Effectiveness of an optional breastfeeding course for multidisciplinary undergraduate healthcare students : A quasi-experimental study. *Nurse Educ Pract* [Internet]. 2023;69(March):103609. Available from: <https://doi.org/10.1016/j.nepr.2023.103609>