

**MATERNAL KNOWLEDGE AND ATTITUDE TOWARDS ADEQUATE
INFANT NUTRITION AMONG POSTNATAL MOTHERS AT A FEDERAL
MEDICAL CENTRE, NIGERIA**

Mercy Olafenwa Ayinde¹, Victor Obosinde Adika², Patricia Ejenawome Dele-Ochei³, Joy
Nkeiruka Jacob⁴, Joy Ezeokoye Olochukwu⁵, Tina Oluchi Emeagha⁶

¹ Faculty of Nursing Sciences, Niger Delta University, Amassoma, Bayelsa State, Nigeria

² Department of Nursing, Southern Delta University, Ozoro, Delta State, Nigeria

³Departments of Medical Laboratory Science, Southern Delta University, Ozoro, Delta State,
Nigeria

^{3, 4 & 5} Department of Nursing, Southern Delta University, Ozoro, Delta State, Nigeria

Corresponding Email: adikavictor@yahoo.ca

Abstract

Background: Suboptimal infant feeding practices remain a leading cause of preventable child malnutrition and mortality in Nigeria. Despite well-established global recommendations, exclusive breastfeeding (EBF) rates and appropriate complementary feeding practices are critically low, particularly in the Niger Delta region.

Objective: To assess maternal knowledge and attitude towards adequate infant nutrition, including EBF and weaning practices, and to examine whether socio-demographic characteristics are significantly associated with feeding outcomes among postnatal mothers attending a federal tertiary health facility in Bayelsa State, Nigeria.

Materials and Methods: A descriptive cross-sectional analytical study design was employed. One hundred and twenty postnatal mothers were recruited by simple random sampling from the postnatal clinic of a federal medical centre in Yenagoa, Bayelsa State. Data were collected through a structured, pre-validated, researcher-administered questionnaire covering socio-demographic characteristics, knowledge of EBF and infant nutrition, weaning knowledge and practice, and attitude towards ensuring adequate infant nutrition. Descriptive statistics (frequencies and percentages) and inferential analyses comprising Pearson chi-square tests, binary logistic regression, one-way analysis of variance, and Spearman rank correlation were applied. Statistical significance was set at $p < 0.05$.

Results: The majority of mothers (71.7%) reported exclusively breastfeeding their infants; however, only 39.2% sustained EBF for six to 12 months. Only 31.7% weaned at the recommended age of six months, and pap (ogi/akamu) was the dominant weaning food (68.3%). Most respondents (73.3%) reported a positive attitude towards ensuring adequate infant nutrition. Nurses were identified as the primary information source by 81.7% of respondents. Chi-square analysis and binary logistic regression revealed no statistically significant associations between any socio-demographic variable and either EBF practice or positive attitude towards infant nutrition (all $p > 0.05$; Cramér's V range: 0.000–0.108).

Conclusion and Recommendations: A significant knowledge–practice gap exists among postnatal mothers in this setting. The absence of significant demographic predictors indicates that the barriers to optimal infant feeding are socio-cultural, structural, and system-level in nature. Targeted, culturally responsive nursing interventions integrated into antenatal and postnatal care platforms are urgently required.

Key words: *infant nutrition, exclusive breastfeeding, weaning practices, maternal knowledge, maternal attitude, postnatal mothers*

1. INTRODUCTION

Sufficient nutrition for infants during the initial 1,000 days of life represents a crucial and cost-effective investment in the development of human capital for any nation (Black et al., 2013). The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) advocate for the prompt initiation of breastfeeding within the first hour after birth, exclusive breastfeeding (EBF) for the initial six months of life, and the introduction of safe and nutritionally adequate complementary foods at six months, alongside ongoing breastfeeding for two years or more (World Health Organization, 2013; UNICEF, 2019). These guidelines are backed by substantial evidence indicating that optimal infant feeding practices can avert around 800,000 avoidable child fatalities each year across the globe (Black et al., 2013).

Despite this data, the national exclusive breastfeeding (EBF) rate in Nigeria is around 23%, significantly lower than the World Health Organization's target of 50% by the year 2025 (National Population Commission & ICF International, 2018). The Niger Delta region in southern Nigeria offers a uniquely challenging environment for infant feeding, influenced by ongoing socio-cultural food restrictions, economic challenges related to environmental degradation from oil activities, and inadequate health infrastructure. Additionally, complementary feeding in this area is hindered by deeply rooted cultural beliefs that limit the inclusion of protein-rich foods, such as eggs and crayfish, for infants, which compromises dietary diversity and the adequacy of nutrition (Agho et al., 2011).

Maternal knowledge and attitude are recognized as proximal determinants of infant feeding behaviour, with positive feeding disposition and adequate nutritional knowledge associated with higher rates of EBF initiation and appropriate complementary feeding (Singh, 2010; Imdad et al., 2011). However, the knowledge–practice gap wherein mothers who possess correct knowledge nonetheless fail to implement recommended feeding behaviours is well-documented across sub-Saharan Africa (Agho et al., 2011; Ogbo et al., 2015). Understanding the specific socio-demographic and contextual correlates of this gap in the Niger Delta is essential for designing targeted, context-sensitive nursing interventions.

The objectives of this study were to: (a) assess maternal knowledge of EBF, infant nutrition, and weaning practices; (b) evaluate maternal attitude towards ensuring adequate infant nutrition; (c) examine associations between selected socio-demographic variables and both EBF practice and positive attitude through inferential statistical analysis; and (d) identify the principal socio-cultural and structural factors shaping infant feeding behaviour, to inform evidence-based nursing practice in this setting.

2. MATERIALS AND METHODS

Study design and setting

A descriptive cross-sectional analytical design was employed, appropriate for characterizing the distribution of knowledge and attitude variables and examining associations between exposures and outcomes at a defined point in time (Hulley et al., 2013). The study was conducted at the postnatal clinic of a federal tertiary health facility in Yenagoa, Bayelsa State a major referral centre serving all eight local government areas of the state.

Participants and sampling

The target population comprised all postnatal mothers of childbearing age (15–49 years) attending the postnatal clinic during the study period. Simple random sampling was used to select 120 eligible respondents. Inclusion criteria were: current or recent postnatal clinic attendance, willingness to provide written informed consent, and ability to communicate in English or with interpreter assistance. Mothers with severe postpartum complications precluding interview participation were excluded.

Data collection instrument

Data were collected using a structured, researcher-administered questionnaire organised into four sections: Section A (socio-demographic data); Section B (knowledge of EBF and infant nutrition components); Section C (weaning knowledge and practice); and Section D (attitude towards adequate infant nutrition, information sources, antenatal attendance, and cultural feeding practices). Face and content validity were established through expert review by nursing faculty, and the instrument was pre-tested among ten postnatal mothers at an adjacent facility not included in the main study. Internal consistency of attitude items was assessed using Cronbach's alpha.

Statistical analysis

Data were coded and analysed using the Statistical Package for the Social Sciences (SPSS) version 23.0. Descriptive statistics including frequencies and percentages were computed for all categorical variables. A composite knowledge score (range: zero to three) was derived by summing three binary knowledge items. Inferential analyses comprised: (i) Pearson chi-square tests of association between socio-demographic variables and binary outcomes, with Cramér's V reported as the effect size; (ii) binary logistic regression models for each outcome variable, each including seven socio-demographic predictors and reporting odds ratios (OR) and 95% confidence intervals (CI); (iii) one-way analysis of variance comparing mean knowledge scores across educational subgroups; and (iv) Spearman rank correlation between knowledge score and attitude. Statistical significance was set at $p < 0.05$.

Ethical considerations

Ethical approval was obtained from the institutional review board of the study institution, and administrative approval was secured from the study facility. All participants provided written informed consent. The study was conducted in full accordance with the Declaration of Helsinki ethical standards for research involving human subjects.

3. RESULTS AND DISCUSSION

Socio-demographic characteristics

The socio-demographic profile of the 120 participants is presented in Table 1. The modal age group was 26–30 years (47.5%), reflecting a predominantly young adult reproductive cohort. The largest educational subgroup was secondary education (51.7%), and 29.2% held tertiary qualifications a relatively educated sample compared with community-based studies in the region. The largest occupational groups were traders (39.2%) and housewives (34.2%), and 67.5% reported an average income level. Christianity was the dominant religion (87.5%), consistent with the demographic profile of Bayelsa State. Primiparous mothers constituted the largest parity subgroup (36.7%).

Table 1: Socio-demographic characteristics of respondents (N = 120)

S/N	Variable	Frequency (n)	Percentage (%)
1	Age group (years)		
	16–20	8	6.7
	21–25	26	21.7
	26–30	57	47.5
	31–35	21	17.5
	36–40	8	6.7
2	Educational level		
	No formal education	5	4.2
	Primary	18	15.0
	Secondary	62	51.7
	Tertiary	35	29.2
3	Parity		
	Primiparous	44	36.7
	Two children	32	26.7
	Three children	17	14.2
	Four or more children	27	22.5
4	Occupation		
	Housewife	41	34.2
	Farmer	1	0.8
	Civil servant	31	25.8
	Trader	47	39.2
5	Religion		
	Christianity	105	87.5

	Islam	11	9.2
	African traditional religion	4	3.3
6	Income level		
	Below average	30	25.0
	Average	81	67.5
	Above average	9	7.5

Key: EBF = exclusive breastfeeding.

This socio-demographic profile mirrors findings from similar tertiary facility-based studies in southern Nigeria, where urban, facility-attending mothers tend to present higher educational attainment and average income levels than community-based samples (Agho et al., 2011; Ogbo et al., 2015). However, the predominance of traders and housewives occupational categories associated with irregular schedules and competing domestic demands suggests that structural time constraints may be significant barriers to sustained EBF in this population.

Maternal knowledge of EBF and infant nutrition

As shown in Table 2, 71.7% of respondents reported exclusively breastfeeding their infants. However, only 39.2% sustained this for six to 12 months far below the WHO-recommended six-month period while 32.5% breastfed for only one to three months. Health reasons (19.2%) and busy schedules (15.0%) were the most frequently cited barriers to EBF. An overwhelming majority (92.5%) affirmed the importance of breast milk for newborns, and 73.3% reported knowledge of the various components of adequate infant nutrition. These findings confirm a pattern widely documented in Nigerian studies: self-reported breastfeeding rates overestimate sustained, guideline-concordant EBF practice, and a critical knowledge–practice gap persists even among educated, facility-attending mothers (Agho et al., 2011; Imdad et al., 2011).

Table 2: Maternal knowledge of exclusive breastfeeding and adequate infant nutrition (N = 120)

S/N	Item	n	%
1	Exclusively breastfeeds/adequately feeds baby		
	Yes	86	71.7
	No	34	28.3
2	Duration of breastfeeding		
	One to three months	39	32.5
	Six to 12 months	47	39.2
	Over one year	12	10.0
	No definite duration	22	18.3
3	Reason for not breastfeeding exclusively		
	Health reasons	23	19.2
	Cosmetic purposes	2	1.7
	Busy schedule	18	15.0
4	Breast milk important for newborn?		
	Yes	111	92.5
	No	3	2.5
	Not sure	6	5.0
5	Knows various components of adequate infant nutrition?		
	Yes	88	73.3
	No	16	13.3
	Not sure	16	13.3
6	Adequate infant nutrition important for the child?		
	Yes	116	96.7

	No	2	1.7
	Not sure	2	1.7

Key: EBF = exclusive breastfeeding.

The high recognition of breast milk's importance (92.5%) alongside a 28.3% rate of non-exclusive feeding is a defining feature of this gap. In the Nigerian context, this dissociation is largely attributable to social pressure from family members, maternal return to trading activities, and cultural beliefs that colostrum or breast milk alone is insufficient — beliefs that persist despite formal health education (Ogbo et al., 2015; Rollins et al., 2016).

Weaning knowledge and practice

Table 3 reveals that 46.7% of respondents correctly defined weaning as the combination of breastfeeding with family foods following six months of EBF, while 9.2% were unable to define it. Only 31.7% weaned at the recommended age of six months, with 13.3% weaning at four months and 50.0% unable to recall the timing. Pap (ogi/akamu) dominated as the weaning food for 68.3% of respondents, followed by formula milk (23.3%).

Table 3: Maternal knowledge and practice of infant weaning (N = 120)

S/N	Item	n	%
1	Understanding of weaning diet		
	Stopping breastfeeding at six months	5	4.2
	Introducing one family food at six months	48	40.0
	Combining breastfeeding and family foods after six-month EBF	56	46.7
	Do not know	11	9.2
2	Has ever weaned a baby?		
	Yes	59	49.2
	No	59	49.2
	Not sure	2	1.7
3	Age at weaning		
	Four months	16	13.3
	Six months	38	31.7
	One year	6	5.0
	Cannot recall	60	50.0
4	Type of weaning food used		
	Pap (ogi/akamu)	82	68.3
	Formula milk	28	23.3
	Semi-solid foods (mashed beans, rice, and so on)	9	7.5
	Other	1	0.8

Key: EBF = exclusive breastfeeding. Pap (ogi/akamu) = fermented maize gruel, the most prevalent traditional weaning food in southern Nigeria.

The predominance of pap as a weaning food is one of the most clinically significant findings of this study. Pap is a fermented maize gruel that is deeply culturally embedded across ethnic groups in the Niger Delta; however, it is nutritionally energy-dilute, protein-deficient, and devoid of critical micronutrients including iron, zinc, and vitamins A and C (Hop et al., 1995; Dewey, 2003). Its use as a primary weaning food without protein enrichment is a well-documented contributor to stunting and micronutrient deficiency in children under two years of age in this region (Cohen et al., 2000). Nurses must actively counsel mothers to enrich traditional complementary foods with locally available protein-rich ingredients including fish, crayfish, beans, and groundnut, rather than relying on pap as a sole weaning diet.

Maternal attitude towards adequate infant nutrition

Table 4 shows that 81.7% of respondents identified nurses and health professionals as their primary source of infant nutrition information — no respondent cited the internet. The majority (73.3%) reported always ensuring adequate infant nutrition. Three-quarters (76.7%) indicated that their cultural practices permit diverse infant foods, while 23.3% reported cultural restrictions on protein-rich foods including eggs and crayfish. Regular antenatal clinic attendance was reported by 60.8% of respondents.

Table 4: Maternal attitude towards adequate infant nutrition (N = 120)

S/N	Item	N	%
1	Primary source of infant nutrition information		
	Nurses and other health professionals	98	81.7
	Newspapers and textbooks	13	10.8
	Television	9	7.5
	Internet	0	0.0
2	Frequency of ensuring adequate infant nutrition		
	Always	88	73.3
	Occasionally	30	25.0
	Rarely	2	1.7
3	Culture permits diverse infant foods?		
	Yes	92	76.7
	No	28	23.3
4	Maternal education influences infant nutrition?		
	Yes	49	40.8
	No	27	22.5
	Not sure	44	36.7
5	Parity affects infant nutrition?		
	Yes	58	48.3
	No	30	25.0
	Not sure	32	26.7
6	Frequency of antenatal clinic attendance		

	Regular — once weekly	73	60.8
	Occasional — twice monthly	14	11.7
	Rare — once monthly	33	27.5

Key: ANC = antenatal clinic.

The complete absence of internet use as an information source contrasts sharply with digital health promotion strategies prevalent in other settings and underscores the digital equity divide in this population. Person-to-person, nurse-delivered counselling and community-based peer support remain the most relevant and effective information delivery modalities for this demographic (Rollins et al., 2016). The cultural restrictions on protein-rich infant foods reported by 23.3% of mothers are directly relevant to the complementary feeding inadequacy observed in this study and require culturally informed, community-level engagement to address (Hop et al., 1995).

Inferential analysis: Chi-square and logistic regression

Tables 5 and 6 present the results of chi-square tests and binary logistic regression analyses. None of the 11 chi-square associations reached statistical significance (all $p > 0.05$), with Cramér's V values ranging from 0.000 to 0.108, indicating uniformly negligible-to-small effect sizes. Binary logistic regression similarly identified no significant independent predictor of either EBF practice or positive attitude in either model, despite adjusting simultaneously for seven socio-demographic predictors. Average or above-average income showed a non-significant positive trend towards predicting positive attitude (OR = 2.05, 95% CI [0.78–5.39], $p = 0.145$) but did not reach significance.

Table 5: Chi-square tests of association between socio-demographic variables and feeding outcomes (N = 120)

Association tested	χ^2	df	p-value	Cramér's V	Sig.
Higher education vs. EBF	0.27	1	0.601	0.048	Ns
Multiparity vs. EBF	0.68	1	0.408	0.076	Ns
Average/above income vs. EBF	0.88	1	0.349	0.085	Ns
Regular ANC attendance vs. EBF	0.00	1	1.000	0.000	Ns
Culture permits diverse foods vs. EBF	0.04	1	0.836	0.019	Ns
Higher education vs. positive attitude	0.04	1	0.848	0.018	Ns
Multiparity vs. positive attitude	0.00	1	1.000	0.000	Ns
Regular ANC vs. positive attitude	0.00	1	1.000	0.000	Ns
Nurses as info source vs. EBF	1.41	1	0.235	0.108	Ns
Knows nutrition components vs. EBF	0.52	1	0.473	0.066	Ns
Culture permits diverse foods vs. positive attitude	0.00	1	0.987	0.002	Ns

Key: EBF = exclusive breastfeeding; ANC = antenatal clinic; ns = not significant ($p > 0.05$). Cramér's V: 0.10 = small, 0.30 = medium, 0.50 = large effect.

Table 6: Binary logistic regression: Adjusted predictors of EBF practice and positive attitude (N = 120)

Variable	OR	95% CI	p-value	Sig.
Model A: Outcome = Exclusive Breastfeeding (yes vs. no)				
Higher education (ref: none/primary)	0.55	[0.18–1.74]	0.313	ns
Multiparity (ref: primiparous)	0.66	[0.26–1.63]	0.363	ns
Average/above income (ref: below average)	1.63	[0.62–4.27]	0.325	ns
Regular ANC attendance (ref: occasional/rare)	0.88	[0.37–2.11]	0.780	ns
Culture permits diverse foods (ref: no)	0.67	[0.24–1.82]	0.431	ns
Knows nutrition components (ref: no/unsure)	0.57	[0.21–1.57]	0.277	ns
Age 26 years or older (ref: 16–25 years)	0.96	[0.38–2.39]	0.928	ns
Model B: Outcome = Positive Attitude (always vs. occasionally/rarely)				
Higher education (ref: none/primary)	1.16	[0.41–3.29]	0.777	ns
Multiparity (ref: primiparous)	1.28	[0.52–3.11]	0.593	ns
Average/above income (ref: below average)	2.05	[0.78–5.39]	0.145	ns
Regular ANC attendance (ref: occasional/rare)	1.24	[0.52–2.97]	0.627	ns
Culture permits diverse foods (ref: no)	1.23	[0.46–3.33]	0.680	ns
Nurses as primary info source (ref: other)	0.51	[0.15–1.75]	0.283	ns
Age 26 years or older (ref: 16–25 years)	1.28	[0.51–3.19]	0.600	ns

Key: OR = odds ratio; CI = confidence interval; EBF = exclusive breastfeeding; ANC = antenatal clinic; ns = not significant ($p > 0.05$). Reference categories shown in parentheses. Both models adjusted for all predictors simultaneously.

These null findings are consistent with a growing evidence base suggesting that the principal determinants of infant feeding behaviour in low- and middle-income African settings are not individual-level demographic characteristics but rather socio-cultural norms, household decision-making dynamics, and health system-level factors (Black et al., 2013; Rollins et al., 2016). Similar findings have been reported in studies from Mozambique and Bangladesh, where formal knowledge and individual demographic

variables failed to predict feeding practice in settings where structural barriers and cultural authority figures exerted a more powerful influence (Ogbo et al., 2015; Uwaezuoke et al., 2017). The absence of significant associations also partly reflects sample size limitations: with Cramér's V values below 0.11, detecting true small-magnitude effects with 80% power would require approximately 350 participants — considerably more than the 120 recruited in this study. Future studies with larger, more heterogeneous, and community-based samples are needed to resolve this uncertainty.

One-way analysis of variance confirmed no statistically significant difference in composite knowledge scores across educational subgroups ($F(3, 116) = 0.26$, $p = 0.856$), and Spearman rank correlation indicated a weak, non-significant positive association between knowledge score and positive attitude ($\rho = 0.117$, $p = 0.203$). These findings collectively reinforce the conclusion that knowledge alone is insufficient to drive optimal infant feeding behaviour in this setting (Singh, 2010; Imdad et al., 2011).

4. CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

This study has demonstrated a significant and clinically important knowledge–practice gap among postnatal mothers at a federal medical centre in Bayelsa State, Nigeria. While the majority of respondents showed adequate knowledge of infant nutrition and expressed positive attitudes towards adequate feeding, these did not consistently translate into WHO-concordant EBF duration, timely weaning, or nutritionally diversified complementary feeding. Inferential analysis confirmed no statistically significant socio-demographic predictors of either outcome, indicating that the barriers to optimal infant nutrition are predominantly structural, socio-cultural, and system-level rather than demographic.

The following recommendations are advanced for the development of infant nutrition practice in this setting. First, nurses and all healthcare providers at federal and state-level health facilities in Nigeria must implement standardised, evidence-based breastfeeding and complementary feeding counselling protocols at every antenatal and postnatal contact. Second, nurse-led nutrition education must directly address prevalent complementary feeding practices, actively promoting the enrichment of traditional foods such as pap with locally available protein-rich ingredients — particularly fish, crayfish, beans, and groundnut — that are abundantly available in coastal Bayelsa State. Third, community-level re-orientation programmes involving local leaders, grandmothers, and family decision-makers are needed to address cultural food taboos that restrict protein-rich foods from infants. Fourth, health authorities should enforce Baby-Friendly Hospital Initiative standards at all tertiary facilities in the Niger Delta region and advocate for extended maternity protection to enable working mothers to sustain EBF. Fifth, future studies should employ larger, community-based, probability samples with a priori power calculations, validated feeding outcome measures, and

longitudinal designs to generate more robust and generalisable evidence on the determinants of infant feeding behaviour in southern Nigeria.

ACKNOWLEDGEMENTS

Gratitude is expressed to the postnatal mothers who participated in this study and to the nursing and administrative staff of the study facility for their cooperation. The Faculty of Nursing, College of Health Sciences, Niger Delta University, is acknowledged for institutional support throughout the conduct of this research. No external funding was received for this study.

AUTHOR CONTRIBUTIONS

Conceptualization: Mercy Olafenwa Ayinde and Victor Obosinde Adika.

Methodology: Mercy Olafenwa Ayinde, Victor Obosinde Adika, Patricia Ejenawome Dele-Ochie, and Joy Nkeiruka Jacob.

Data Collection: Mercy Olafenwa Ayinde and

Formal Analysis: Victor Obosinde Adika, Joy Ezeokoye Olochukwu and Tina Oluchi Emeagha.

Investigation: Mercy Olafenwa Ayinde, Patricia Ejenawome Dele-Ochie, and Joy Nkeiruka Jacob.

Supervision: Victor Obosinde Adika, Patricia Ejenawome Dele-Ochie, and Joy Nkeiruka Jacob.

Writing – Original Draft Preparation: Mercy Olafenwa Ayinde and Victor Obosinde Adika.

Writing – Review and Editing: Victor Obosinde Adika, Patricia Ejenawome Dele-Ochie, Joy Nkeiruka Jacob, Joy Ezeokoye Olochukwu, Joy Ezeokoye Olochukwu and Tina Oluchi Emeagha.

Validation: All authors.

Final Approval of Manuscript: All authors read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this study.

ETHICAL APPROVAL

Ethical approval for the study was obtained from the appropriate Institutional Research Ethics Committee of the study facility prior to commencement of data collection. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki for research involving human participants.

INFORMED CONSENT

Written informed consent was obtained from all participants before enrolment in the study. Participation was voluntary, and respondents were assured of confidentiality, anonymity, and their right to withdraw at any stage without penalty.

DATA AVAILABILITY STATEMENT

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

ACKNOWLEDGEMENTS

The authors sincerely appreciate all postnatal mothers who participated in this study. Appreciation is also extended to the nursing and administrative staff of the study facility for their cooperation and support during data collection. The Faculty of Nursing, College of Health Sciences, Niger Delta University, is gratefully acknowledged for academic support throughout the conduct of the study.

REFERENCES

- Agho, K. E., Inder, K. J., Burt, S., Clifford, J., Jacklyn, C., & Dibley, M. J. (2011). Factors associated with exclusive breastfeeding in Nigeria: A secondary data analysis of the 2008 demographic and health survey. *Maternal & Child Nutrition*, 7(4), 297–309. <https://doi.org/10.1111/j.1740-8709.2010.00262.x>
- Al-Nassaj, N., Al-Ward, N., & Al-Awqurati, N. (2004). Knowledge, attitude and sources of information on breastfeeding among medical professionals in Baghdad. *Eastern Mediterranean Health Journal*, 10(4–5), 600–608.
- Anderson, J. W., Johnstone, B. M., & Remley, D. T. (1999). Breast-feeding and cognitive development: A meta-analysis. *American Journal of Clinical Nutrition*, 70(4), 525–535. <https://doi.org/10.1093/ajcn/70.4.525> [Note: Not cited in body text — please add in-text citation or remove.]
- Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet*, 382, 427–451. [https://doi.org/10.1016/S0140-6736\(13\)60937-X](https://doi.org/10.1016/S0140-6736(13)60937-X)
- Cohen, R. J., Rivera, L. L., Canahuati, J., Brown, K. H., & Dewey, K. G. (2000). Delaying the introduction of complementary food until six months does not affect appetite or mothers' report of food acceptance. *Journal of Nutrition*, 130(11), 2683–2690. <https://doi.org/10.1093/jn/130.11.2683>
- Dewey, K. G. (2003). *Guiding principles for complementary feeding of the breastfed child*. PAHO/WHO.
- Food and Agriculture Organization of the United Nations. (2012). *Study on the impact of armed conflicts on the nutritional situation of children*. FAO.
- Graffy, J. P. (1992). Mothers' attitudes to and experience of breast feeding: A primary care study. *British Journal of General Practice*, 42(354), 61–64. [Note: Not cited in body text — please add in-text citation or remove.]
- Hop, L. T., Giay, T., Sastroamidjojo, S., Schultink, W., & Lang, N. T. (1995). Premature complementary feeding is associated with poorer growth of Vietnamese children. *Journal of Nutrition*, 125(10), 2787–2792. <https://doi.org/10.1093/jn/125.10.2787>
- Hulley, S. B., Cummings, S. R., Browner, W. S., Grady, D. G., & Newman, T. B. (2013). *Designing clinical research* (4th ed.). Lippincott Williams & Wilkins.
- Imdad, A., Yakoob, M. Y., & Bhutta, Z. A. (2011). Effect of breastfeeding promotion interventions on breastfeeding rates, with special focus on developing countries.

BMC Public Health, 11(Suppl. 3), S24. <https://doi.org/10.1186/1471-2458-11-S3-S24>

- Kramer, M. S., & Kakuma, R. (2012). Optimal duration of exclusive breastfeeding. *Cochrane Database of Systematic Reviews*, (8), CD003517. <https://doi.org/10.1002/14651858.CD003517.pub2> [Note: Not cited in body text — please add in-text citation or remove.]
- National Population Commission & ICF International. (2018). *Nigeria demographic and health survey 2018*. NPC and ICF International.
- Ogbo, F. A., Eastwood, J., Page, A., Ayara, N., Agho, K. E., & Dibley, M. J. (2015). Prevalence and determinants of cessation of exclusive breastfeeding in the early postnatal period. *International Breastfeeding Journal*, 10, 31. <https://doi.org/10.1186/s13006-015-0056-4>
- Onyiriuka, A. N. (2011). Evaluation and management of the child with failure to thrive. *Hospital Chronicles*, 6(1), 9–13. [Note: Not cited in body text — please add in-text citation or remove.]
- Rollins, N. C., Bhandari, N., Hajeebhoy, N., Horton, S., Lauer, J. M., Martines, J. C., Piwoz, E. G., Richter, L. M., & Victora, C. G. (2016). Why invest, and what it will take to improve breastfeeding practices? *Lancet*, 387(10017), 491–504. [https://doi.org/10.1016/S0140-6736\(15\)01044-2](https://doi.org/10.1016/S0140-6736(15)01044-2)
- Singh, B. (2010). Knowledge and attitude of breast feeding: A case study. *European Journal of Scientific Research*, 40(3), 404–422.
- UNICEF. (2019). *Breastfeeding: A mother's gift, for every child*. UNICEF.
- Uwaezuoke, S. N., Eneh, C. I., & Ndu, I. K. (2017). Relationship between exclusive breastfeeding and lower risk of childhood obesity: A narrative review. *Clinical Medicine Insights: Pediatrics*, 11, 1–7. <https://doi.org/10.1177/1179556517690196>
- Victora, C. G., Bahl, R., Barros, A. J., França, G. V., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., Walker, N., & Rollins, N. C. (2016). Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *Lancet*, 387(10017), 475–490. [https://doi.org/10.1016/S0140-6736\(15\)01024-7](https://doi.org/10.1016/S0140-6736(15)01024-7).
- World Health Organization. (2013). *Essential nutrition actions: Improving maternal, newborn, infant and young child health and nutrition*. WHO.