

2016

Breastfeeding in Nigeria: A systematic review

Emmanuel O. Adewuyi
Edith Cowan University

Kazeem Adefemi

Follow this and additional works at: <https://ro.ecu.edu.au/ecuworkspost2013>



Part of the [Public Health Commons](#)

[10.18203/2394-6040.ijcmph20160421](https://doi.org/10.18203/2394-6040.ijcmph20160421)

Adewuyi, E. O., & Adefemi, K. (2016). Breastfeeding in Nigeria: A systematic review. *International Journal of Community Medicine and Public Health*, 3(2), 385-396. <https://doi.org/10.18203/2394-6040.ijcmph20160421>

This Journal Article is posted at Research Online.

<https://ro.ecu.edu.au/ecuworkspost2013/10877>

Review Article

Breastfeeding in Nigeria: a systematic review

Emmanuel O. Adewuyi^{1*}, Kazeem Adefemi²

¹Department of Epidemiology and Biostatistics, School of Public Health, Curtin University, Perth, Australia

²Health & Social Relief Initiatives, Ilorin, Kwara State, Nigeria

Received: 30 December 2015

Accepted: 21 January 2016

*Correspondence:

Emmanuel O. Adewuyi,

E-mail: adewuyiemma@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Breastfeeding confers numerous benefits on babies and mothers. Early initiation, 'exclusive breastfeeding' and breastfeeding for at least two years post-delivery are the recommended practices. This study aims to examine the trends of breastfeeding practice in Nigeria by reviewing available published studies. The online databases of PubMed, Science Direct and the Web of Knowledge were searched using relevant terms. Studies identified were screened for eligibility and those that met the inclusion criteria were included in this review. Graphs and regression equations were generated using Microsoft Excel® to illustrate the duration of and trends in, breastfeeding practices in Nigeria. This review adopts the WHO standard definitions for breastfeeding categories. A total of 24 studies met the inclusion criteria but only two of these adopted the standard WHO breastfeeding categories in estimating the rates of breastfeeding. The regression equations and graphs generated show a declining trend in the rates of 'exclusive breastfeeding' and an increasing trend in the mean duration of breastfeeding. The rate of 'any breastfeeding' was high. Breastfeeding duration varies across Nigeria, a possible reflection of differences in sociocultural practices. Various reasons were cited for discontinuation of breastfeeding, the commonest of these were maternal health problems and the demands of work. Breastfeeding is commonly practiced in Nigeria. However, the rate of 'exclusive breastfeeding' is low and declining. It is recommended that future studies on breastfeeding in Nigeria adopt the standard WHO definitions.

Keywords: Breastfeeding, Breastfeeding duration, Exclusive breastfeeding, Infant feeding, Nigeria

INTRODUCTION

Breastfeeding is perhaps the oldest practice in human history. It is the healthiest, simplest and least expensive means of meeting the nutritional needs of newborns and infants.¹ Breast milk contains all essential nutrients – carbohydrates, essential fats, proteins, minerals, and immunological factors – required for the optimal growth and development of infants; hence, it is the ideal meal for them.¹

Given the importance of breastfeeding, the World Health Organization (WHO) adopted the 'Innocenti Declaration' which emphasizes the need to initiate breastfeeding

within the first hour of delivery.² The declaration further recommends exclusive breastfeeding for newborns up to the first six months of life, and that breastfeeding should continue for at least two years post-delivery.² It equally recommends the introduction of safe, appropriate and adequate complementary foods starting from the age of six months.³

Several beneficial effects – short and long term – have been linked with appropriate breastfeeding practices in babies and their mothers. Reduced incidence of respiratory tract infections, non-specific gastroenteritis, otitis media, atopic dermatitis and childhood leukemia are some of the benefits of optimal breastfeeding in infants.^{4,5}

Breastfeeding improves motor and mental development in babies and protects them against conditions like diabetes (type 1 and 2), asthma, necrotising enterocolitis, sudden infant death syndrome (SIDS) and obesity.^{4,5} In mothers, breastfeeding reduces postpartum bleeding, enhances accelerated involution of the uterus and plays a crucial role in child spacing through lactational amenorrhea.^{4,5} Other maternal benefits of breastfeeding include reduced risks of osteoporosis, hip fracture, breast cancer, ovarian cancer, and type 2 diabetes.^{4,6}

Evidence from a recent study indicates that breastfeeding is critical to the survival of newborns and infants.⁷ An estimated 13% reduction in infant mortality rate can be achieved through the practice of exclusive breastfeeding.⁸ Initiating breastfeeding within the first hour of life could reduce the rate of neonatal mortality by up to 22%.⁹ The many benefits of breastfeeding notwithstanding, the rate of exclusive breastfeeding is only 39% in developing countries.¹⁰

In Nigeria, almost all children are breastfed.¹¹ However, the rate of exclusive breastfeeding is low and declining – from 28% in 1999 to 17% in 2013.¹¹ The rate of breastfeeding initiation within the first hour of delivery is equally low (38%).¹² These low rates of breastfeeding practice possibly contribute to the high burden of neonatal and infant mortality in the country. Evidence linking inappropriate breastfeeding practices with child morbidity and mortality lends credence to this position.¹³

Although there are many research studies on breastfeeding in Nigeria, there are hardly any systematic reviews on the subject. Studies reviewing the rates of breastfeeding have been carried out in China, Saudi Arabia and Japan.¹⁴⁻¹⁶ To the best of knowledge, there is no such study in Nigeria yet; hence, the necessity for this review which aims to contribute to a better understanding of breastfeeding trends in Nigeria. The study provides a summary of breastfeeding practices (rates of 'exclusive' and 'any breastfeeding', duration of breastfeeding and the reasons for cessation) in Nigeria.

METHODS

A search for all peer-reviewed research papers on breastfeeding in Nigeria was conducted between April and May 2015, using the online databases of PubMed, Science Direct and Web of Knowledge. The key terms used in the search were: 'breastfeeding', 'breastfeeding', 'breast-feeding', and 'Nigeria'. Relevant papers were identified, and their reference lists checked for studies that were missed inadvertently. Only studies published in English language with a cross-sectional design and that reported the practice of breastfeeding in Nigeria were included. Studies with a focus on attitude, knowledge and beliefs about breastfeeding that did not report the practice of breastfeeding were excluded. Also, studies with

breastfeeding as a secondary associated factor and breastfeeding in disease conditions such as HIV/AIDS were left out. Similarly, studies analyzing several Nigeria Demographic and Health Surveys (NDHS) for trends of breastfeeding or comparing breastfeeding in ethnic nationalities or Nigeria with other countries were excluded. Figure 1 shows the PRISMA diagram¹⁷ of how the reviewed studies were selected.

This review adopts the WHO definitions of breastfeeding as described below,¹⁸ and studies that do not conform to the WHO definitions were appropriately reclassified.

Exclusive breastfeeding

Feeding on breast milk or expressed breast milk only, excluding water, breast milk substitutes, other liquids and solid foods. Oral rehydrating solution, vitamin drops, minerals, and medicines may be given.

Predominant breastfeeding

Feeding on breast milk or expressed breast milk with other liquids (including water), semi-solid and solid meals. Oral rehydrating solution, vitamin drops, minerals, and medicines may be given.

Complementary breastfeeding

Feeding on breast milk or expressed milk or milk from a wet nurse, as well as on solid or semi-solid foods. There is no restriction, anything – food, liquid, non-human milk – may be given.

Any breastfeeding

Feeding on breast milk or expressed breast milk or from a wet nurse with any liquids or foods, including formula or non-human milk. Table 1 describes these definitions further.

Where a study failed to classify infants into the above categories, it was interpreted in this review as 'any breastfeeding'. The selected papers were ranked according to the levels of evidence from the National Health and Medical Research Council (NHMRC) [I – IV].²⁰ Level IV evidence is the weakest while the level I is the strongest (Table 2).

The trends in the rate of breastfeeding ('exclusive' and 'any') at about the sixth month of life and in the mean duration of breastfeeding was explored using Microsoft Excel® version 2013. Linear graphs and linear regression equations were generated to illustrate the trends.

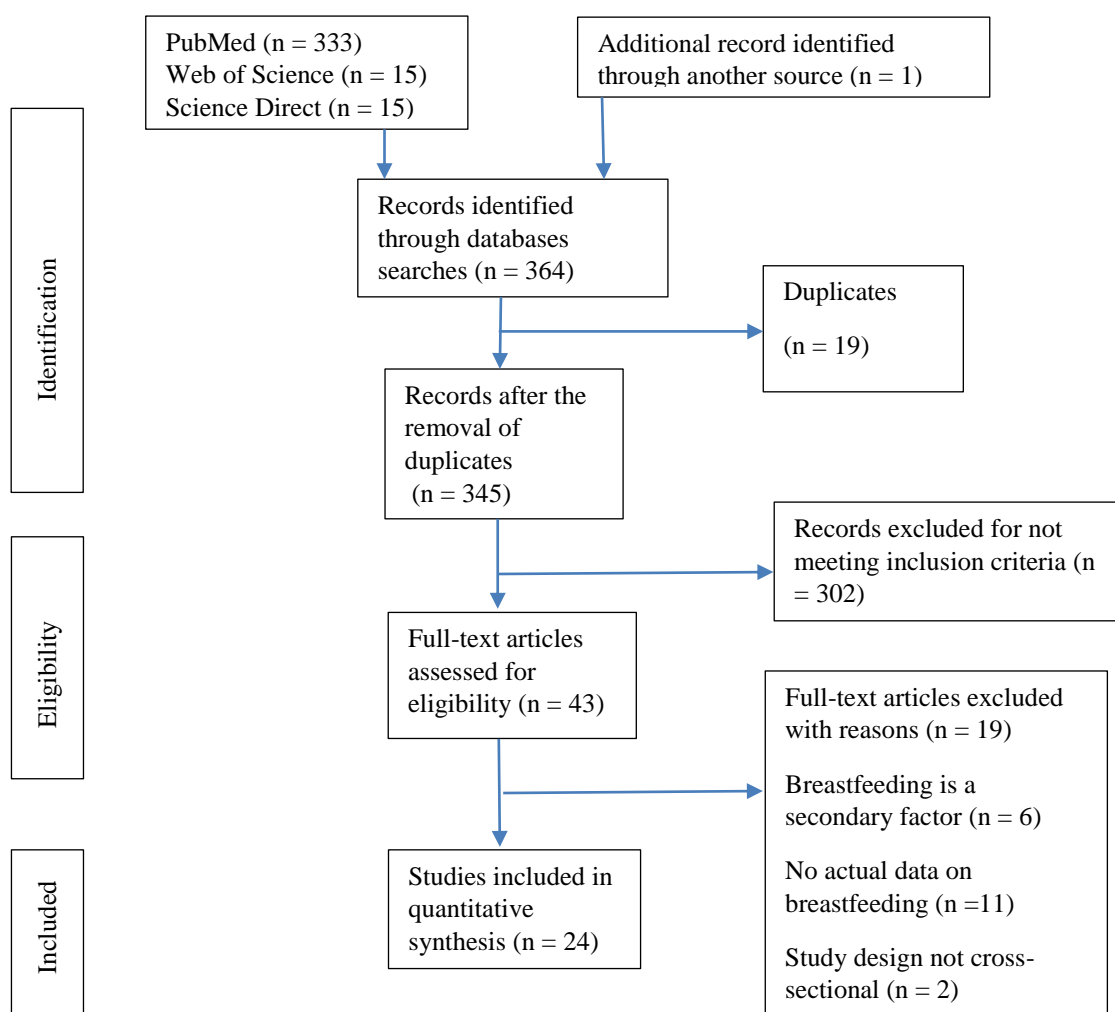


Figure 1: Process of selecting the studies included in this review.

Table 1: Definition of selected feeding practices from the World Health Organization.¹⁹

IF options	What this IF option requires	What this IF option allows	What this IF option does not allow
Exclusive breastfeeding (EBF)	Breast milk (including milk expressed or from a wet nurse)	Oral rehydration solution (ORS), drops or syrup (vitamins, minerals, medicines)	Anything else
Predominant breastfeeding (PBF)	Breast milk (including expressed milk or milk from wet nurse) as the predominant source of nourishment	Liquids (water and water-based drinks, fruit juices, ORS), ritual fluids and drops or syrups (vitamins, minerals, medicines)	Anything else (in particular, non-human milk, food-based fluids)
Breastfeeding with complementary foods (CBF)	Breast milk (including milk expressed or from a wet nurse) and solid or semi-solid foods	Anything else, any food or liquid including non-human milk or formula	No restriction applicable
Breastfeeding (BF)	Breast milk (including milk expressed or from a wet nurse)	Anything else, any food or liquid including non-human milk or formula	No restriction applicable

IF = Infant Feeding

Table 2: Definitions and categorization of infants as reported in the reviewed studies.

S/N	Study	Definitions – infant feeding categories (provided in the methods)	Study location in Nigeria	NHMRC Level
1	Agho et al ²¹	“The exclusive breastfeeding rate was defined as the proportion of infants, aged less than six months, who received only breast milk and no other liquids or solids except for drops or syrups consisting of vitamins, minerals supplements or medicines.”	Nationwide	IV
2	Agunbiade et al ³⁴	No definition provided	Osun state	IV
3	Bamisaiye, Oyediran ³⁵	No definition provided	Lagos state	IV
4	Egbuonu et al ³⁰	No definition provided	Onitsha, Anambra state	IV
5	Ighogboja et al ³⁶	No definition provided	Jos, Plateau state	IV
6	Isenalumhe et al ³⁷	No definition provided	Benin, Edo state	IV
7	Kazimi LJ ³⁸	No definition	Owerri, Imo state	IV
8	Kuti et al ²⁶	“A mother was deemed to have exclusively breastfed if she suckled her baby on demand, night, and day and no artificial milk or any food supplement was given to the infant.”	Ilesa, Osun state	IV
9	Lawoyin ³¹	“Exclusive breastfeeding is defined as infant feeding with human milk without the addition of any other liquid or solids”	Ibadan, Oyo state	IV
10	Mudambi ³⁹	No definition provided	Midwestern Nigeria (presently Delta and Edo state)	IV
11	Oche et al ⁴⁰	“Exclusive breastfeeding in this study refers to the practice of giving the infant only breast milk for six months without any fluids except liquid medicines”.	Kware, Sokoto state	IV
12	Ogunlesi ³²	“Exclusive breastfeeding is defined as an infant’s consumption of human milk with no supplementation of any type (no water, no juice, no non-human milk, and no foods) except for vitamins, minerals, and medications”.	Ilesa, Osun state	IV
13	Ojofeitimi ⁴¹	No definition provided	Ile-Ife, Osun state	IV
14	Ojofeitimi et al ²³	No definition provided	Ile-Ife, Osun state	IV
15	Oni ⁴²	No definition provided	Ilorin, Kwara state	IV
16	Ojofeitimi et al ²²	No definition provided	Ile-Ife, Osun state	IV
17	Okeahialam ²⁴	No definition provided	Enugu and Imo state	IV
18	Okolo et al ²⁹	No definition provided	Toto, Nasarawa state	IV
19	Olayemi et al ²⁷	No definition provided	Ibadan, Oyo state	IV
20	Onah et al ¹⁹	WHO recommended definitions of breastfeeding provided	Nnewi, Anambra state	IV
21	Rehan et al ⁴³	No definition provided	Katsina state	IV
22	Torimiro et al ²⁸	No definition provided	B – health zone (Delta, Edo, Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo States)	IV
23	Senbanjo et al ⁴⁴	“Ever breastfed: The child was ever breastfed. Exclusive breastfeeding: The child was breastfed exclusive of any other food or fluid with the exception of small amounts of medicinal	Lagos state	IV

supplements. Predominant breastfeeding: When breast milk was the main source of nourishment but supplemented by water, water-based drinks, fruit juice, drops or syrups containing vitamins and minerals, supplements or medicines. Other food-based fluids, such as non-human milk, were excluded. Pre-lacteal feeds: Introduction of fluid or feeds prior to lactation”				
24	Uwaegbute et al ²⁵	No definition provided	Enugu and Anambra state (urban and rural)	IV



Figure 2: Map of Nigeria showing the 36 states and the capital city.

RESULTS AND DISCUSSION

Description of reviewed papers and sample characteristics

The literature search yielded 24 studies that meet the inclusion criteria for this review (n = 24). Table 2 highlights these studies with their study locations, the feeding categories, and definitions given for breastfeeding. All the papers included were cross-sectional studies, and only one was nationally representative.²¹ The majority of the studies (78.3%) were set in the southern regions of the country (see figure 2) while only a few (21.7%) were conducted in the northern parts of the country (see Table 2). Of the six geo-political zones in Nigeria, the Southwest had the highest number of studies (n = 10, representing 45.5% of all studies).

The year of publication of the studies ranged from 1979 to 2014. Half of them (n = 12) were published between the years 2000 and 2014 while the remaining half were published before 2000. A high number (n = 8) of the studies were published in the 1980s, representing 33.3% of the studies included. Four of the studies did a comparison of breastfeeding between the rural and urban centers.²²⁻²⁵ Only two studies reported that the WHO definitions were used in estimating breastfeeding

rates,^{19,21} although five other studies defined exclusive and/or other types of breastfeeding correctly.^{26,31,32,40,44}

Exclusive breastfeeding

The rate of ‘exclusive breastfeeding’ is low (Table 3). Only three studies reported a rate greater than 60% at about the sixth month of an infant’s life.²⁶⁻²⁸ In Nasarawa state (North-Central Nigeria), exclusive breastfeeding rate was zero percent.²⁹ In Onitsha (South-East Nigeria), 100% of mothers had established breastfeeding in their newborns before been discharged from the hospital.³⁰ At six and fourteen weeks visits for post-natal care, the rate was still impressive – 81.4% and 74.7% respectively. At about the sixth month, however, the rate had gone as low as 3.9%.³⁰ From the information available in three of the reviewed studies, the rate of exclusive breastfeeding decreases as infant’s age increases.³⁰⁻³²

Onah, Osuorah, Ebenebe, Ezechukwu, Ekwochi, Ndukwu found a relationship between exclusive breastfeeding and maternal educational level, socioeconomic status and the mode of delivery.¹⁹ According to this study, mothers who had a caesarean section and mothers with high socioeconomic status were less likely to practice exclusive breastfeeding.¹⁹ On the other hand, mothers with high educational attainment (tertiary education) were more likely to breastfeed exclusively.¹⁹ This observation (association between exclusive breastfeeding and education) agrees with the report of a recent study in Nigeria.³³ However, the inverse relationship between exclusive breastfeeding and socioeconomic status does not agree with the new study.

Using studies that reported rates at six months only, this review explored the trends of exclusive breastfeeding in Nigeria by generating a linear graph with a corresponding regression equation (Figure 3). Granted that the graph does not represent a perfect linear regression, it does show a declining trend in the rate of exclusive breastfeeding from about 42% in the year 2000 to about 29% in 2014. Although the rates differ, this finding agrees with the report of 2013 NDHS where the rate of exclusive breastfeeding decreased from 28% in 1999 to 17% in 2013.¹¹ The observed difference may be as a result of the low sample sizes and insufficient

information in some of the reviewed studies. In any case NDHS is known to be nationally representative with

larger sample size; hence, it is expected to provide a more reliable estimate.

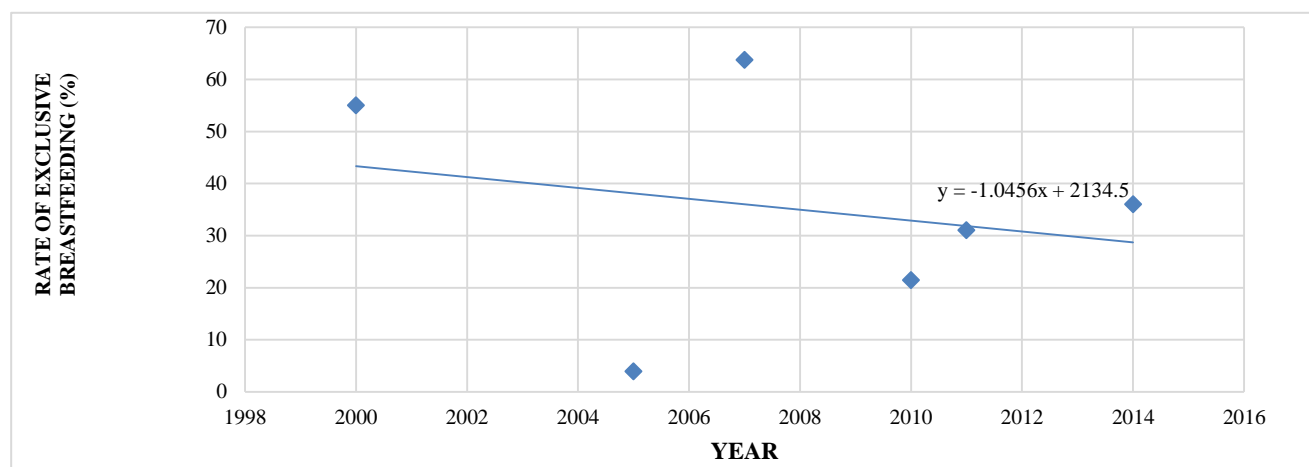


Figure 3: The decline in the rates of exclusive breastfeeding in Nigeria derived from the reviewed studies.

Any breastfeeding

In this review, the rate of ‘any breastfeeding’ in infants at about their sixth month is high, although there was no uniform system of reporting in the reviewed articles (Table 3). This rate ranges from 58% to 97.8% with a mean of 81.6%. Okolo, Adewunmi, Okonji reported a 99.6% rate of ‘any breastfeeding’ at about 24 months of age in the North-Central state of Nasarawa, while three studies reported a 100% rates, although the age at which this occurred was not given.^{25,32,39} These results are similar to the popular opinion in literature – that almost all children are breastfed in Nigeria (any breastfeeding).⁴⁵ Again, it is true that the graph generated does not represent a perfect linear regression; nevertheless, it does

fairly presents the trends of ‘any breastfeeding’ in Nigeria from 1979 to 2014. While the graph shows that the rate was high, it equally indicates a trend of marginal decline in the rate of ‘any breastfeeding’ over the years – from 82% in 1979 to 80% in 2014 (Figure 4). Lawoyin, Olawuyi, Onadeko found that the rate of ‘any breastfeeding’ increases with increasing infant age.³¹ Accordingly, these authors found a rate of 42.6% at age below one month, 54.7% at three to four months and 76.6% at five to six months. In contrast, three reviewed studies found that the rate of ‘any breastfeeding’ decreased as infant age increased.^{24,30,35} This variation in results may be linked with bias associated with the use of inappropriate study designs as argued by Juaid, Binns, Giglia.¹⁵

Table 3: Results of studies that have investigated breastfeeding practices in Nigeria.

S/N	Study	Design	Sample Size (n)	Initiation of BF* after birth		Exclusive BF*		Any BF*		BF* duration (m+)	
				Time (hour)	Rate (%)	Child age (m+)	Rate (%)	Child age (m+)	Rate (%)		
1	Agho et al ²¹	Cross-sectional	658	-	-	< 6	16.4	< 6	72	-	
2	Agunbiade et al ³⁴	Cross-sectional	200	≤ 1	45	≤ 6	19	-	-	-	-
				1.1-2	29						
				2.1-24	18						
				>24	6						
3	Bamisaie et al ³⁵	Cross-sectional	98	≤ 1	99	-	-	Birth	99	Mean (given) =	
								2	89	6.7	
								4	71	Median =	
								6	67	5.5 ± 4.6	
								12	18		

								>12	6	
4	Egbuonu et al ³⁰	Cross-sectional	178	≤ 1	73	OD* *	100	OD* *	100	-
				1.1-2	5.6	1.5	81.4	1.5	99.4	
				2.1-6	1.1	3.5	74.7	3.5	98.3	
				6.1-15	0.6	6	3.9	6	97.8	
				>24	1.1					
5	Ighogboja et al ³⁶	Cross-sectional	800	≤ 24	55	-	-	-	82	Mean (given) = 15 SD*+ = 4.9
6	Isenalumhe et al ³⁷	Cross-sectional	210	-	-	-	9	-	90	Mean (given) = 7.5
7	Kazimi et al ³⁸	Cross-sectional	508	-	-	-	-	6	94	Mean (given) = 10.6
8	Kuti et al ²⁶	Cross-sectional	268	-	-	≥ 6	71.6	≥ 6	97.4	-
9	Lawoyin et al ³¹	Cross-sectional	2794	-	-	≤ 1	57.4	≤ 1	42.6	-
						2 - 3	48.7	2 - 3	52.3	
						3 - 4	45.3	3 - 4	54.7	
						5 - 6	23.4	5 - 6	76.6	
10	Mudambi ³⁹	Cross-sectional	150	-	-	-	-	-	100	Mean (calculated) = 6.25
11	Oche et al ⁴⁰	Cross-sectional	179	≤ 0.5	53	6	31			
				> 0.5	47					
12	Ogunlesi ³²	Cross-sectional	262	≤ 1	37.4	≤ 3	33.3		100	
						4 - 6	22.2			
						6	21.4			
						7 - 24	19.4			
13	Ojofeitimi ⁴¹	Cross-sectional	264	≤ 1	2.7					
				3 - 10	37.1					
				≥ 11	60.2					
14	Ojofeitimi et al ²³	Cross-sectional	431 (U* = 217, R* = 214)	≤ 0.5	52.9	6	55		45	
				0.5-1	8.6					
				>6	9.1					
				24 - 72	12.3					
15	Ojofeitimi et al ²²	Cross-sectional	200 (U* = 140, R* = 60)	≤ 24	80					
				≤ 48	93					
				≤ 72	100					
16	Okeahialam ²⁴	Cross-sectional	1,039 (U* = 496, R* = 543)					Birth 3	85*a 78*a	
								6	58*a	
17	Okolo et al ²⁹	Cross-sectional	310			≤ 24	0.0	≤ 24	99.6	
18	Olayemi et al ²⁷	Cross-sectional	744			6	63.7			Mean (given) = 14.1
19	Onah et al ¹⁹	Cross-sectional	400	≤ 0.5	19.8	≤ 6	33.5	≤ 6	66.5	(PBF* = 27.6, CBF* = 38.8)
				1 - 6	28.8					
				> 6	28.5					

20	Oni ⁴²	Cross-sectional	1146					Mean (given) = 16.2 Median (given) = 15.0
21	Rehan et al ⁴³	Cross-sectional	600					Mean (given) = 18.6
22	Senbanjo et al ⁴⁴	Cross-sectional	311 (for BF* practices)	≤ 0.5 1 - 6	97 54	6	36	Mean (given) = 11.5 ± 4.2
23	Torimiro et al ²⁸	Cross-sectional	2466			≤ 6	74.4	
24	Uwaegbute et al ²⁵	Cross-sectional	734 (U* = 378, R* = 356)				100	

BF* = Breastfeeding, m+ = Months, OD** = On Discharge from the Hospital, U* = Urban, R* = Rural, PBF* = Predominant Breastfeeding, CBF* = Complementary Breastfeeding; *a = average of rural and urban rates.

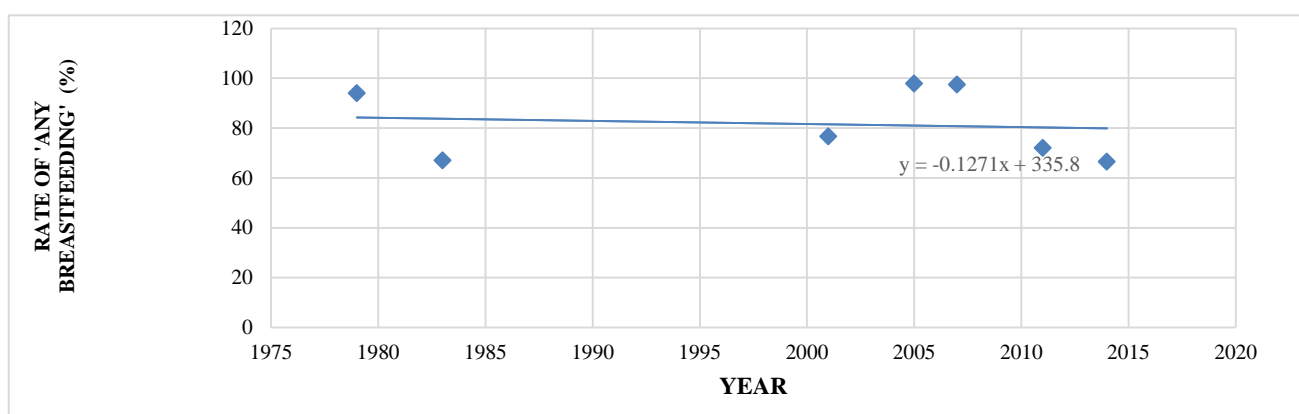


Figure 4: A slight decline in the rates of any breastfeeding in Nigeria derived from the reviewed studies.

Duration of breastfeeding

The mean duration of breastfeeding, as captured in Figure 5, shows an increasing trend – from about ten months in 1979 to 13 months in 2014. However, within the period covered by studies in this review, the mean duration of breastfeeding across Nigeria varies (see Table 3). For instance Oni found an average length of 16.2 months in the North-Central city of Ilorin, while Isenalumhe, Oviawe reported a mean duration of 7.5 months in the South-South town of Benin. Similarly in 1981, an average duration of 18.6 months was reported in the North-West state of Katsina, while 6.24 months was reported in Delta and Edo states (South-South, Nigeria).^{37,39,42,43} Breastfeeding duration, therefore, varies with the regions in Nigeria and possibly reflects the differences in sociocultural practices.

Bamisaieye, Oyediran found a longer breastfeeding duration amongst women with low grade/salary level.³⁵ A closely related finding was reported by Ighogboja, Odumodu, Olarewaju - women with no education or primary education breastfed for a longer duration (17.9 ± 4.2 and 19.1 ± 3.9 months respectively).³⁶ Kazimi, Kazimi equally reported a similar finding (inverse relationship between duration of breastfeeding and maternal educational background).³⁸ A possible explanation for this observations would be the impact of high-skilled occupations on the length of breastfeeding. Highly educated women may have higher demand from their works, thus, are unable to breastfeed for long.

Initiation of breastfeeding

The rate of breastfeeding initiation as found in this review was low. Only three studies reported a rate greater than 70% within the recommended one hour of

delivery.^{30,35,44} In Nasarawa state, none of the children had breastfeeding initiation within one hour following delivery.²⁹

The rate at which breastfeeding was initiated within the first one hour of delivery varies considerably. Ojofeitimi found the lowest rates of 2.7% in Osun state while Bamisaiye, Oyediran reported the highest rates of 99% in Lagos state.^{35,41} These two studies were published just two years apart in the same geopolitical zone (South-

West, Nigeria) [with possible similarities in sociocultural practices], yet, there was such a wide variation in their rates of breastfeeding initiation. A likely explanation would be the level of breastfeeding knowledge among the study participants. The study population in Bamisaiye, Oyediran comprised of female health workers in a tertiary health facility.³⁵ These probably were better informed about the benefits of early breastfeeding initiation; and hence, the higher rate of initiation found.

Table 4: Reasons for stopping or not breastfeeding as reported in the reviewed studies.

Study	Nipple biting (%)	Mother health problem (%)	Insufficient milk (%)	Work/business (%)	Child health problem (%)	Pregnancy (%)	Lack of husband's support (%)	Others (%)
Agunbiade et al ³⁴	-	83 *	24	24	11	13	23	**Baby not satisfied (29)
Bamisaiye et al ³⁵	-	14	-	31	-	--	-	- Usual time to stop (30) - Baby preferred bottle (20)
Isenalumhe et al ³⁷	11.1	19.2	27.4	-	-	-	-	- Over indulgence in sucking (14.1) - Refusal to suck (28.15)
Mudambi ³⁹	-	-	-	-	-	-	15	6
Ona et al ¹⁹ ++	-	-	-	8.7	-	-	-	Baby cries too much (22.7), baby not gaining weight (6.4), felt baby was thirsty (25.3), pressure from relatives (15.5)
Senbanjo et al ⁴⁴	2.3	6.2	3.1	10.9	16.3*+	6.2	-	Maternal decision (47.3), HIV in mother (2.3), Twin delivery (0.8), Peers' advice (1.6), Loss of husband (0.8)
Uwaegbute et al ²⁵		2R 1.4U		3.7R 8.8U	3.8U	1.9R 6.8U		R – old enough (87.1), advice of relatives (3.3), U – Old enough (78.6), Refusal to suck (0.6).

*Aggregate of several maternal health problems itemized;** = Many other reasons given; ++ = reasons for not breastfeeding exclusively; *+ = Baby stopped on its own; R= Rural areas; U = Urban areas.

Many reasons were cited for late initiation of breastfeeding. In Jos North-Central Nigeria, caesarean delivery (24%), low milk production (51%) and baby's refusal to suck (12%) were the reasons given.³⁶ Similarly in Benin city, low milk production was mentioned by

16% of mothers while 27% felt it was inappropriate to initiate breastfeeding with 'dirty' or unclean milk (referring to colostrum).³⁷ Also, in Sokoto state, 68.1% felt colostrum was dirty, 13.8 claimed there was no breast milk, mother was sick in 8.6% of cases, child was sick in

5.7% instances while 3.8% had no reason for not initiating breastfeeding.⁴⁰

Breastfeeding discontinuation

Breastfeeding was discontinued for various reasons. The most frequently cited reasons were related to the demand for work or business and maternal health problems. Table 4 gives a summary of these reasons.

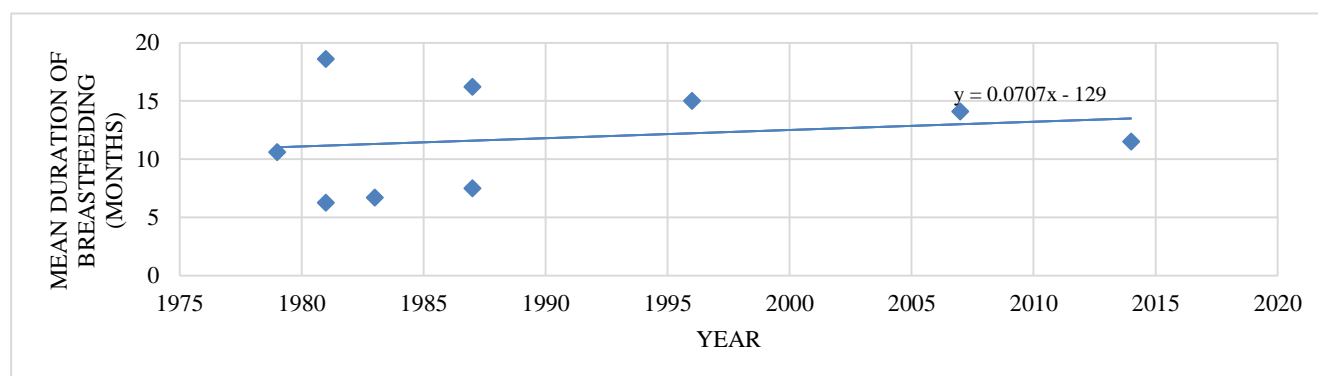


Figure 5: Plot of mean duration of breastfeeding, derived from the reviewed studies.

Limitations

The poor quality of some of the studies, especially on data reporting practices of the authors is an obvious limitation in this review. Besides the incompleteness of the required information, a few studies failed to document the study period. Differences in the definitions of breastfeeding, small sample sizes and insufficient information on the rate of breastfeeding (initiation, exclusive and other types of breastfeeding) limited the extent to which comparison could be made. Since data collection in the reviewed papers depended largely on the memory of mothers, recall bias is not unlikely. This review, therefore, presents a good starting point for subsequent studies on the practice of breastfeeding in Nigeria.

CONCLUSIONS

The practice of breastfeeding in Nigeria was reviewed. Of the 24 papers that met the inclusion criteria, 78.3% were conducted in the southern part of Nigeria, and 45% of the studies were set in the southwest geopolitical zone. Only two studies reported the use of the WHO definitions in estimating the rates of breastfeeding. In line with the general view in the literature, this review found a high rate of breastfeeding in Nigeria up to the sixth-month post-delivery. However, 'exclusive breastfeeding' was low and declining. Similarly, the rate of initiation of breastfeeding within the first hour of delivery was low and varied across the country. The mean duration of breastfeeding, however, appears to be on the increase. A range of reasons was given for discontinuing breastfeeding. However, the demands of work and maternal illness top the list.

It is recommended that more studies on the practice of breastfeeding be carried out in Nigeria using large sample sizes. Also, future researches should adopt the WHO classifications. Owing to the challenges associated with cross-sectional design, more appropriate study designs such as cohort studies are recommended for a better assessment of breastfeeding practices in Nigeria.

ACKNOWLEDGEMENTS

The authors gratefully appreciate the time and effort of Professor Colin Binns for his invaluable guide and support in undertaking this study. The authors equally appreciate the kind effort of Dr. John Fielder in reading through the original manuscript.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Ballard O, Morrow AL. Human milk composition: nutrients and bioactive factors. *Pediatric Clinics of North America*. 2013;60(1):49-74.
2. Kramer MS. The Optimal Duration of Exclusive Breastfeeding: A Systematic Review Document produced by the Department of Child and Adolescent Health. Geneva: Geneva: World Health Organization. 2002.
3. World Health Organization. Indicators for assessing infant and young child feeding practices part 3: country profiles. 2010.
4. Eidelman AI, Schanler RJ, Johnston M. Breastfeeding and the use of human milk. *Pediatrics*. 2012;129(3):e827-e841.

5. Stuebe A. The risks of not breastfeeding for mothers and infants. *Reviews in obstetrics and gynecology.* 2009;2(4):222.
6. Victora CG, Horta BL, de Mola CL. Association between breastfeeding and intelligence, educational attainment, and income at 30 years of age: a prospective birth cohort study from Brazil. *The Lancet Global Health.* 2015;3(4):e199-e205.
7. Gupta A, Dadhich JP, Suri S. *Infant Malnutrition/Breastfeeding* ☆. Reference Module in Biomedical Sciences: Elsevier. 2015.
8. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year? *The Lancet.* 2003;362(9377):65-71.
9. Edmond K, Zandoh C, Quigley MA, Amenga-Etego S, Owusu-Agyei S, Kirkwood B. Delayed breastfeeding initiation increases risk of neonatal mortality. *Pediatrics.* 2006;117(3):E380-E386.
10. Cai X, Wardlaw T, Brown DW. Global trends in exclusive breastfeeding. *Int Breastfeed J.* 2012;7(1):12.
11. National Population Commission. *Nigeria 2013 Demographic and Health Survey.* Abuja: National Population Commission. 2014.
12. Ogbo FA, Agho KE, Page A. Determinants of suboptimal breastfeeding practices in Nigeria: evidence from the 2008 demographic and health survey. *BMC public health.* 2015;15(1):259.
13. Black RE, Victora CG, Walker SP. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet.* 2013;382(9890):427-51.
14. Xu F, Qiu L, Binns C, Liu X. Breastfeeding in China: a review. 2009.
15. Juaid D, Binns C, Giglia R. Breastfeeding in Saudi Arabia: A review. 2014.
16. Inoue M, Binns Colin W, Otsuka K, Jimba M, Matsubara M. Infant feeding practices and breastfeeding duration in Japan: A review. *International Breastfeeding Journal.* 2012;7(1).
17. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine.* 2009;151(4):264-69.
18. Binns CW, Fraser ML, Lee AH, Scott J. Defining exclusive breastfeeding in Australia. *Journal of paediatrics and child health.* 2009;45(4):174-80.
19. Onah S, Osuorah DI, Ebenebe J, Ezechukwu C, Ekwochi U, Ndukwu I. Infant feeding practices and maternal socio-demographic factors that influence practice of exclusive breastfeeding among mothers in Nnewi South-East Nigeria: a cross-sectional and analytical study. *Int Breastfeed J.* 2014;9:6.
20. National Health and Medical Research Council. *How to use evidence: assesment and application of scientific evidence.* Canberra. 2000.
21. Agho KE, Dibley MJ, Odiase JI, Ogbonmwan SM. Determinants of exclusive breastfeeding in Nigeria. *BMC Pregnancy Childbirth.* 2011;11:2.
22. Ojofeitimi EO, Olaogun AA, Osokoya AA, Owolabi SP. Infant feeding practices in a deprived environment: a concern for early introduction of water and glucose D water to neonates. *Nutr Health.* 1999;13(1):11-21.
23. Ojofeitimi EO, Esimai OA, Owolabi OO, Oluwabusi, Olaobaju OF, Olanuga TO. Breast feeding practices in urban and rural health centres: impact of baby friendly hospital initiative in Ile-Ife, Nigeria. *Nutr Health.* 2000;14(2):119-25.
24. Okeahialam TC. Breast-feeding practices among Nigerian Igbo mothers. *J Trop Pediatr.* 1986;32(4):154-7.
25. Uwaegbute AC, Nnanyelugo DO. Differences in the infant-feeding practices in Urban and Rural Nigeria. *Journal of Nutrition Education.* 1987;19(2):83-9.
26. Kuti O, Adeyemi AB, Owolabi AT. Breast-feeding pattern and onset of menstruation among Yoruba mothers of South-west Nigeria. *Eur J Contracept Reprod Health Care.* 2007;12(4):335-9.
27. Olayemi O, Aimakhu CO, Bello FA. The influence of social support on the duration of breast-feeding among antenatal patients in Ibadan. *J Obstet Gynaecol.* 2007;27(8):802-5.
28. Torimiro SE, Onayade AA, Olumese I, Makanjuola RO. Health benefits of selected global breastfeeding recommendations among children 0-6 months in Nigeria. *Nutr Health.* 2004;18(1):49-59.
29. Okolo SN, Adewunmi YB, Okonji MC. Current breastfeeding knowledge, attitude, and practices of mothers in five rural communities in the Savannah region of Nigeria. *J Trop Pediatr.* 1999;45(6):323-6.
30. Egbuonu I, Ezechukwu CC, Chukwuka JO, Ikechebelu JI. Breast-feeding, return of menses, sexual activity and contraceptive practices among mothers in the first six months of lactation in Onitsha, South Eastern Nigeria. *J Obstet Gynaecol.* 2005;25(5):500-3.
31. Lawoyin TO, Olawuyi JF, Onadeko MO. Factors associated with exclusive breastfeeding in Ibadan, Nigeria. *J Hum Lact.* 2001;17(4):321-5.
32. Ogunlesi TA. Maternal socio-demographic factors influencing the initiation and exclusivity of breastfeeding in a Nigerian semi-urban setting. *Matern Child Health J.* 2010;14(3):459-65.
33. Ogbo FA, Page A, Agho KE, Claudio F. Determinants of trends in breast-feeding indicators in Nigeria, 1999-2013. *Public Health Nutr.* 2015:1-13.
34. Agunbiade OM, Ogunleye OV. Constraints to exclusive breastfeeding practice among breastfeeding mothers in Southwest Nigeria: implications for scaling up. *Int Breastfeed J.* 2012;7:5.
35. Bamisaiye A, Oyediran MA. Breast-feeding among female employees at a major health institution in Lagos, Nigeria. *Soc Sci Med.* 1983;17(23):1867-71.
36. Ighogboja IS, Odumodu CU, Olarewaju RS. Breastfeeding pattern in Jos, Nigeria, before baby-

- friendly hospital initiative. *J Trop Pediatr.* 1996;42(3):178-9.
37. Isenalumhe AE, Oviawe O. Prelacteal feeds and breast-feeding problems. *Indian J Pediatr.* 1987;54(1):89-96.
38. Kazimi LJ, Kazimi HR. Infant feeding practices of the Igbo, Nigeria. *Ecol Food Nutr.* 1979;8(2):111-6.
39. Mudambi SR. Breast-feeding practices of mothers from Mid-Western Nigeria. *J Trop Pediatr.* 1981;27(2):96-100.
40. Oche MO, Umar AS, Ahmed H. Knowledge and practice of exclusive breastfeeding in Kware, Nigeria. *Afr Health Sci.* 2011;11(3):518-23.
41. Ojofeitimi EO. Breast-feeding patterns in a Nigerian maternity center. *Clin Pediatr (Phila).* 1981;20(6):412-14.
42. Oni GA. Breast-feeding pattern in an urban Nigerian community. *Journal of Biosocial Science.* 1987;19(4):453-62.
43. Rehan N, Abashiya AK. Breastfeeding and abstinence among Hausa women. *Stud Fam Plann.* 1981;12(5):233-7.
44. Senbanjo IO, Oshikoya KA, Ogbera OA, Wright KO, Anga AL. Breastfeeding policy and practices at the general paediatric outpatient clinic of a teaching hospital in Lagos, Nigeria. *International Breastfeeding Journal.* 2014;9.
45. National Population Commission. Nigeria demographic and health survey 2008. Calverton, MD: National Population Commission and ORC/Macro. 2009.

Cite this article as: Adewuyi EO, Adefemi K. Breastfeeding in Nigeria: a systematic review. *Int J Community Med Public Health* 2016;3:385-96.