

# Pattern of rates of exclusive breastfeeding in the Niger Delta region of Nigeria

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## Abstract

**Background:** The promotion of exclusive breastfeeding has the potential to make a major contribution to the achievement of the child Millennium Development Goals.

**Objective:** The aim of this study was to document the pattern of rates of exclusive breastfeeding. This was a cross-sectional descriptive study.

**Materials and Methods:** The study was carried out at a Child Welfare Unit of the Maternal and Child Health Centre. The tool used was an interviewer-administered questionnaire among 276 mothers who brought their infants to the Child Welfare Unit in the Niger Delta region of Nigeria. A systematic sampling technique was used to recruit the subjects. The data were analyzed using Epi Info statistical package, version 3.2.2 (CDC, Atlanta, GA).

**Results:** The maternal age ranged between 16 and 50 years with the mean age of 30.2 and a standard deviation of 7.9. The number of male infants was 140 (50.7%) whereas that of the females was 136 (49.3%). Less than half of the infants (130, 47.1%) were 6 months and above whereas the remaining (146, 52.9%) were below 6 months. Of the 130 (47.1%) infants that were 6 months and above, 22.8% were exclusively breastfed for 6 months. Out of the 146 infants that were below 6 months, 56 were below 2 months, 48 were 2 to below 4 months, and 42 were 4 to below 6 months, and the rates of exclusive breastfeeding for the various categories were 41.1%, 33.3%, and 23.8%, respectively.

**Conclusion:** The pattern of rates of exclusive breastfeeding when stratified by infant's age from below 2 months to 6 months varies between 41.1% and 22.8%. These indicate the need to pursue public awareness on exclusive breastfeeding vigorously.

**KEY WORDS:** Pattern, exclusive breastfeeding, Niger Delta region, Nigeria

## Introduction

According to World Health Organization (WHO), exclusive breastfeeding is the feeding of an infant with only breast milk for the first 6 months of life.<sup>[1]</sup> However, the term *exclusive breastfeeding* can also be used for infants who were fed

with only breast milk for various durations below 6 months. For instance, an infant can be said to have been exclusively breastfed for 1, 2, 3, 4, or 5 months as the case may be. The rates of exclusive breastfeeding can therefore be determined for these various durations.

Breast milk is a natural resource that has a major impact on child's health, growth, and development.<sup>[2]</sup> It is considered the most complete nutritional source for infants because it contains the essential fats, carbohydrates, proteins, and immunological factors needed for infants to thrive and resist infections in the formative years of life.<sup>[3]</sup> WHO in 2002 recommended exclusive breastfeeding for the first 6 months of life.<sup>[4]</sup> The recommended exclusive breastfeeding practice according to the WHO and United Nations International Children Fund (UNICEF) is associated with the general well-being of under-five children.<sup>[4]</sup> It has been documented

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that exclusive breastfeeding for 6 months can avert 13% of infant deaths.<sup>[5]</sup> The promotion of exclusive breastfeeding has the potential to make a major contribution to the achievement of the child Millennium Development Goals.<sup>[5]</sup> Bearing in mind these overwhelming benefits, WHO along with grassroots nongovernmental organizations such as the International Baby Food Action (IBFAN), Breastfeeding Network, Centre for Disease Control's Division of Nutrition, Physical Activity and Obesity, and the National Women's Health Information Centre have played a large role in encouraging governmental departments to promote exclusive breastfeeding.<sup>[6]</sup> The governmental exclusive breastfeeding campaigns and strategies around the world include National Breastfeeding Week in the UK, the Department of Health and Ageing Breastfeeding Strategy in Australia, and World Breastfeeding Week. As a way of promoting, protecting, and supporting exclusive breastfeeding in Nigeria, the Federal Ministry of Health has planned to engage female religious leaders to stress the importance of exclusive breastfeeding in the first 6 months of life.<sup>[7]</sup> This strategy relies on the faith element because women have faith in the words of their female religious leaders and are more likely to heed them.

In Africa, breastfeeding is a normal and cultural way of feeding infants, resulting in high rates of initiation and longer duration of breastfeeding. Globally, less than 35% of infants are exclusively breastfed during the first 6 months of life.<sup>[2]</sup> UNICEF, the United Nations agency that focuses on the health of children, compiles statistics on exclusive breastfeeding rates around the regions of the world. The statistics on the percentage of infants less than 6 months of age who have been exclusively breastfed are:<sup>[8]</sup> South Asia 45%, East Asia/Pacific 32%, Central Europe/Russia Republics and Baltic States 27%, East/Southern Africa 42%, Middle East/North Africa 29%, and West/Central Africa 22%.

Some researchers in Infant and Young Child Feeding have also made efforts to report pattern of rates of exclusive breastfeeding in infants below 6 months. It was observed that exclusive breastfeeding tends to decline with increased age in months. According to the IBFAN, *African Regional Office Report*<sup>[9]</sup> exclusive breastfeeding rate at 3–4 months in the region was as follows: Botswana 29.7%, Eritrea 64%, Ghana 36%, Kenya 17%, Lesotho 54%, Malawi 11%, Somalia 7%, Sudan 40.8%, Swaziland 53%, Tanzania 4.1%, Uganda 68%, and Zimbabwe 2.5%.<sup>[7]</sup> A National Population Commission (NPC)<sup>[10]</sup> report in 2004 showed that exclusive breastfeeding rates in Nigeria at less than 4 months and less than 6 months in 2003 were 22.3% and 17.2%, respectively. Similarly, NPC reported in 2009 that the exclusive breastfeeding rates at less than 4 months and less than 6 months in Nigeria had dropped further to 16.7% and 13.1%, respectively.<sup>[11]</sup> In Calabar, Nigeria, the prevalence of exclusive breastfeeding at 6 months was reported to be 22.9%<sup>[12]</sup> in a prospective study of maternal exclusive breastfeeding practices.

Although several reports on the rates of exclusive breastfeeding are available,<sup>[13–15]</sup> there is little or no report on the pattern of rates of exclusive breastfeeding in this part of Nigeria. The objective of this study was to document the

pattern of rates of exclusive breastfeeding in a part of the Niger Delta region of Nigeria.

## Materials and Methods

University of Uyo is one of the tertiary health facilities in the Nigerian Niger Delta region. It provides health-care services to the people of the Niger Delta region of Nigeria. One of its main medical outreach centers is the Maternal and Child Health (MCH) located in Uyo; a capital city in the Niger Delta region. The 2006 census population of Uyo city was 3,902,501.<sup>[16]</sup> Going by the annual growth rate of 3.2%, the projected crude population for 2010 was 4,426,513. The MCH center serves mainly 11 political wards, and 83 villages in the Niger Delta region.<sup>[16]</sup>

This study was a cross-sectional study designed to document the rates of exclusive breastfeeding practice in a part of the Niger –Delta region. It was carried out at MCH clinic between October and December 2011. A sample size of 271 mothers and infants was calculated using the exclusive breastfeeding rate of 22.9%<sup>[12]</sup> obtained from a previous study. The formula and the calculation of sample size are as follow:

$$n = \frac{(Z_{1-a})^2 P (1-P)}{d^2}$$

where:

$n$  = Minimum sample size

$Z_{1-a}$  = Constant at 95% confidence interval from two tables, which is 1.96 for two-tailed study

$P$  = Best estimate of population prevalence obtained from literature review, which is 22.9%<sup>[10]</sup>

$d$  = Precision, which at 95% confidence interval is 5%

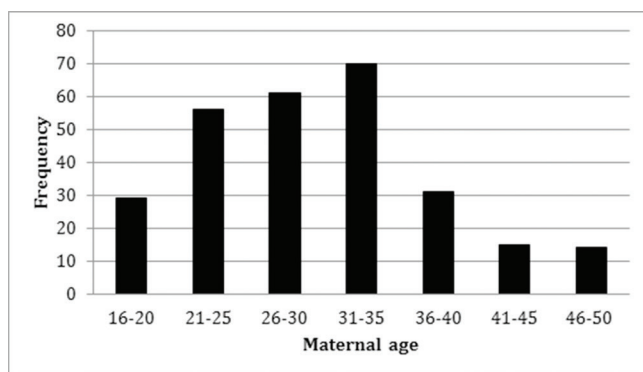
$$n = \frac{(1.96)^2 \times 0.229 (1 - 0.229)}{(0.05)^2} = 271$$

However, 276 eligible mothers and infants were recruited through a systematic random sampling technique. The sampling interval ( $K$ ) was determined using the formula  $K = N/n$ , where  $N$  is the estimated population size for the study period and  $n$  the minimum sample size. Therefore,  $K = 1056/271 = 3.98$ . This was approximated to 4. The first subject was selected by a simple random sampling from the first 4 dyad of mother and child who met the inclusion criteria. Subsequently every fourth dyad was selected (provided he/she met the inclusion criteria) until the required sample size was obtained. An average of 11 dyad of mother and child were recruited in each clinic day using a semi-structured interviewer-administered questionnaire after a signed consent had been obtained from the mothers. The instrument (questionnaire) was validated through a pretest conducted on 10 dyad of mother and infant.

The inclusion criteria for the mother include being the biological mother of the child and have to be free of any

**Table 1:** Maternal age distribution

Characteristics	Frequency (n)	Percentage
Maternal age (years)		
16–20	29	10.5
21–25	56	20.3
26–30	61	22.1
31–35	70	25.4
36–40	31	11.2
41–45	15	05.4
46–50	14	05.1
Total	276	100



**Figure 1:** Maternal age distribution.

self-reported medical condition making any breastfeeding or exclusive breastfeeding inadvisable or difficult.

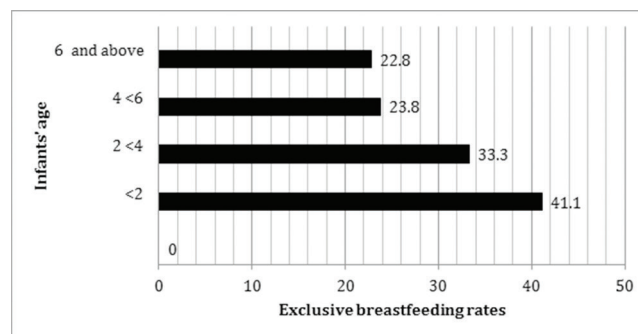
Approval for the study was obtained from the research and ethics committee of University of Uyo Teaching Hospital, Uyo, Akwa-Ibom State. The data were analyzed using Epi Info statistical package, version 3.2.2 (CDC, Atlanta, GA). The results were represented in tables bar charts and pie charts.

## Results

A total of 276 dyads of mothers and infants were recruited for the study (Table 1, Figure 1). The maternal age ranged between 16 and 50 years with the mean age of 30.2 and a standard deviation of 7.9. The number of male infants was 140 (50.7%) whereas that of the females was 136 (49.3%). Less than half of the infants (130, 47.1%) were 6 months and above whereas the remaining infants (146, 52.9%) were below 6 months (Table 2). Out of the 130 (47.1%) infants that were 6 months and above, 22.8% were exclusively breastfed for 6 months. Similarly, out of the 146 infants that were below 6 months, 56 were below 2 months, 48 were 2 to below 4 months, and 42 were 4 to below 6 months (Table 2), and the rates of exclusive breastfeeding for the various categories were 41.1%, 33.3%, and 23.8%, respectively (Figure 2).

**Table 2:** Infants' age distribution

Infants' age (months)	n	%
<2	56	20.3
2 to <4	48	17.4
4 to <6	42	15.2
6 and above	130	47.1
Total	276	100



**Figure 2:** Pattern of rates of exclusive breastfeeding.

## Discussion

For babies who were older than 6 months, the rate of exclusive breastfeeding at 6 months in this study was 22.8%. This figure is comparable to that reported from other parts of Nigeria. For instance, 22.9% was reported in Calabar,<sup>[12]</sup> and 21.2%<sup>[17]</sup> and 22.0%<sup>[18]</sup> in Enugu and Kano, respectively. Higher figures have also been reported in Nigeria; 38.0% in Benin City,<sup>[19]</sup> 37.3%<sup>[20]</sup> in Anambra State and 67%<sup>[21]</sup> in Jos. The figure in this study is higher than the figures reported in Onitsha (3.9%),<sup>[22]</sup> urban ghetto of Lagos (9.0%),<sup>[23]</sup> and the one documented by Sadoh et al. (41.1%)<sup>[24]</sup> among medical women.

Elsewhere in Africa, the rates of maternal exclusive breastfeeding practice have been reported to be equally discouraging. In Ethiopia, Tewodro et al.<sup>[13]</sup> and Hana et al.<sup>[25]</sup> independently reported the rates of exclusive breastfeeding to be 49.0% and 19.0%. In Ghana, Mariana<sup>[26]</sup> had documented 26.0% in Garu-Tanzu and 40.0% in Bawku town.

Outside the shores of Africa, figures obtained for exclusive breastfeeding rate include 75% for Sri Lanka,<sup>[27]</sup> 10% for America,<sup>[28]</sup> 50.6% for Turkey,<sup>[29]</sup> 43.1% for Malaysia,<sup>[30]</sup> and 24.4% for Saudi Arabia.<sup>[31]</sup> These large variations in the rate of maternal exclusive breastfeeding may be due to differences in methodology, population studied, cultural/traditional affiliation of the people as well as regional perceptions of exclusive breastfeeding. These unacceptably low rates of exclusive breastfeeding at 6 months have brought to the fore the issues of ineffective grassroots public awareness and the negative perception of the people about exclusive breastfeeding.

Some researchers in the field of Infant and Young Child Feeding have taken a lead in finding out the pattern of rates of exclusive breastfeeding among infants in the first few months of life. In a study on the prevalence of exclusive breastfeeding among US infants, Ruowei et al.<sup>[28]</sup> adduced that the rate of exclusive breastfeeding at 7 days after birth, 2 months, 4 months, and 6 months were 47.0%, 32.0%, 19.0%, and 10.0%, respectively. Similarly, Jose et al.<sup>[32]</sup> while studying maternal and perinatal factors influencing the duration of exclusive breastfeeding during the first 6 months of life, noted that the rates of exclusive breastfeeding at 1 month, 4 months, and 6 months were 97.0%, 83.0%, 56.0%, and 19.0%, respectively.<sup>[32]</sup> Pakom et al.<sup>[33]</sup> further noted with concern in a study on the prevalence of exclusive breastfeeding at 3, 4, and 6 months in Bangkok Metropolitan Administration Medical College and Vajira Hospital that the rates of exclusive breastfeeding at 3, 4, and 6 months were 48.0%, 26.0%, and 11.0%, respectively. In Iran, Esfahani and Fathizadeh, while studying continuous exclusive breastfeeding and some related factors in selected hospitals, found that 93.1% of the infants were exclusively breastfed at 1 month, and the rate was observed to have declined to 86.3% at 6 months.<sup>[34]</sup> The trends obtained in the present study are similar to the ones reported earlier. For instance, the rate of exclusive breastfeeding for infants that were less than 2 months was 41.1%, and about a third (33.3%) of the infants that were 2 to below 4 months were being exclusively breastfed as at the time of the study. This figure further dropped to 23.8% in the category of infants that were 4 to below 6 months.

These low rates of exclusive breastfeeding in the first few months of life reported are a matter of serious concern, considering the benefits of exclusive breastfeeding to the under-five children. In the current study, deep cultural affiliation of the people and their negative exclusive breastfeeding perceptions may have contributed to this unacceptably low exclusive breastfeeding rates.

The limitations identified in the study include the questionnaire used for this study was supposed to be self-reported diagnostic tools. Its interpretation to the respondents may reduce the accuracy of the responses. Second, this was a cross-sectional study; the actual percentage of the mothers that practiced exclusive breastfeeding (according to WHO criteria) could not be definitely established.

## Conclusion

The pattern of rates of exclusive breastfeeding when stratified by infants' age from below 2 months to 6 months varies between 41.1% and 22.8%. It shows that maternal exclusive breastfeeding practice in this part of the Niger Delta region of Nigeria is far below the WHO recommendation on appropriate nutrition for infants that are 6 months and below. It also indicates the urgent need to vigorously pursue public awareness on exclusive breastfeeding practice for the first 6 months of life.

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